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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

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JAN. 13 1938

Vol. CVI No. 2

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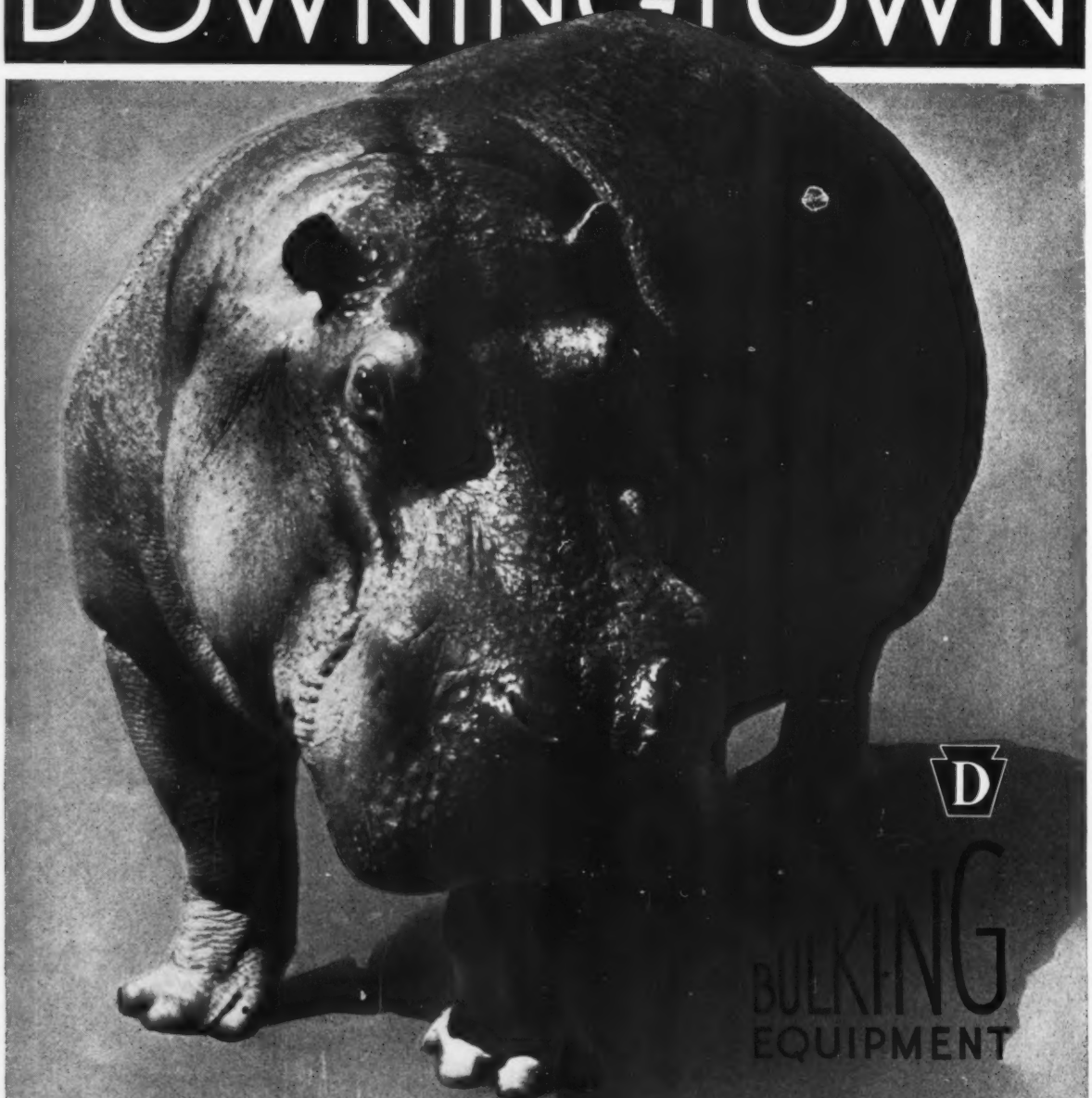

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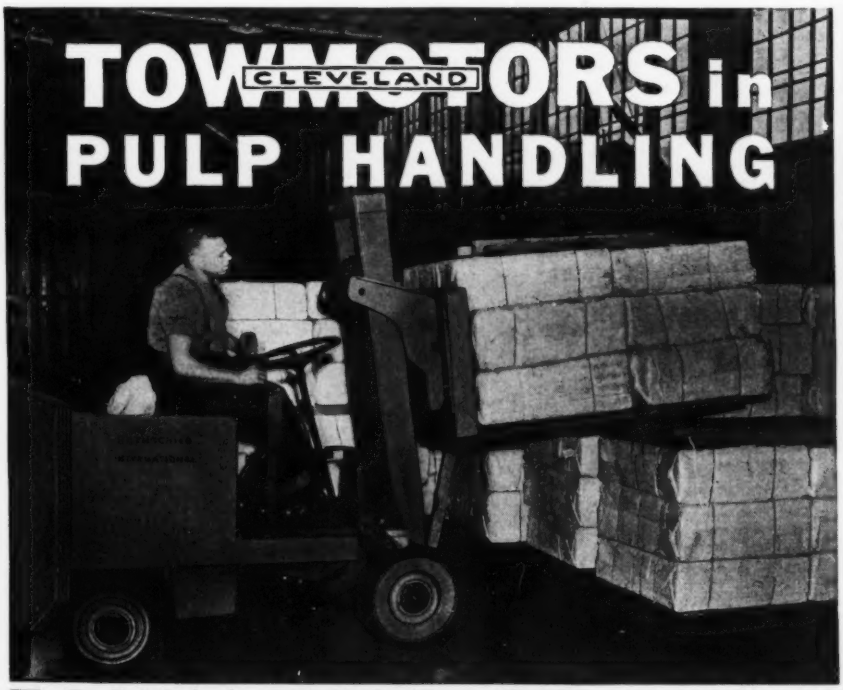

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SIXTY-SIXTH YEAR

PAPER

PAPER

Established Feb. 17, 1899
Consolidated Nov. 16, 1899
with Paper Trade Journal.

Vol. CVI, No. 2 Thursday, January 13, 1938

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Thunder Bay Area a High Producer Last Year

Four Mills In Thunder Bay District Produced 276,000 Tons of Paper in 1937 — Abitibi Mill At Port Arthur Produced 79,000 Tons of Newsprint—Provincial Mill Changes—Newsprint Situation Is Called Serious.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 10, 1938.—From out the forests of Thunder Bay and immediate adjacent districts last year have come 375,000 cords of wood. In four mills more than 1,500 men were employed in transforming this wood into 276,000 tons of newsprint and fine paper, in addition to other allied products such as sulphite and groundwood pulp. These figures alone give some idea of the importance of the pulp and paper industry to the commercial and industrial and business life of the district, and when to them is added the thousands of bushworkers, camp employees and office staffs and transportation workers who obtained employment in the export pulp trade, the figures become more impressive.

The year saw the return to full operation of the Thunder Bay plant of the Abitibi Power & Paper Company in Port Arthur, where during the year an average of 325 men were given employment, 79,000 tons of newsprint being produced and 100,000 cords of wood used. At the Port Arthur plant of Provincial Paper Ltd., a staff of 400 was employed during the year. Approximately 70,000 cords were used, newsprint and fine paper production in which the mill specializes running to 32,000 tons. In addition 22,500 tons of sulphite were produced, and 1,500 tons of pulp screens, used in the manufacture of boxboard and cardboard cartons in the eastern mills of the company. The groundboard mill produced 20,000 tons of groundwood pulp during 1937.

Fort William welcomed the reopening on May 7 of the Abitibi Power & Paper Company plant in that city, with an average staff of 190 given employment since the early summer, and 55,000 tons of newsprint produced from 80,000 cords of wood.

The Fort William plant of the Great Lakes Paper Company, one of the largest of its kind in the world, gave employment to more than 500 men, with a larger staff being employed during the summer months in log boom work and boat loading. The mill this year produced 110,000 tons of newsprint, 125,000 cords of wood passing through the mill. An average of 50 tons a day of unbleached newsgrade sulphite was produced. Official figures indicate that the pulpwood in the Thunder Bay district will set a record in the season 1936-1937 with a total of 604,316 cords to be cut for Lakehead mills and for export.

Provincial Mill Plans Changes

Completing its first twenty years of service in Port Arthur, Provincial Paper Ltd., is moving forward a program of improvements to the company equipment and property which will enable it to continue and extend its production of high grade book papers at an even higher rate than in previous years, A. G. Pounsford, general manager, announced last week. The major change now being undertaken at the mill in Port Arthur is the conversion of No. 2 paper machine to permit it to be used in the manufacture of book and writing paper rather than newsprint which has been the principal product manufactured on this machine for some years. This work will be completed by the end of February and the mill will then be on a basis of all book paper, no newsprint being produced. The average payroll at the mill is 400 men and women, and in addition, approximately 700 men are on the limits of the company, producing 70,000 cords of wood for next year's consumption. The growth of the company can be seen when these figures are compared with the original staff of 175 men twenty years ago, and a wood consumption of 24,000 cords. Port Arthur division of Provincial now has two towing tugs and two Diesel-powered units on Lake Superior for use in rafting and smaller gasoline craft on inland waters. Of the original payroll of 175 men in 1917 when the mill began operating, there are still forty on the payroll at the present time.

Port Arthur Wood for Hammermill

For many years the name "Hammermill" in the United States has been synonymous with high grade writing paper and from the woods of Northwestern Ontario have gone hundreds of thousands of cords of the best quality of spruce, to be used in the manufacture of that paper. The Hammermill Paper Company with its manufacturing plant at Erie, Penn., has been purchasing wood in the Thunder Bay district for more than thirty years, opening a branch

(Continued on page 28)

Nekoosa-Edwards Report Satisfactory Year

President John E. Alexander of Nekoosa-Edwards Paper Co. States Operations of Company for 1937 Were Satisfactory — Civilian Conservation Corps Plants Approximately 50,000,000 Trees In the State of Wisconsin.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 10, 1938.—Operations of the Nekoosa-Edwards Paper Company, Nekoosa and Port Edwards, Wis., for the year 1937 were quite satisfactory as compared with the previous year, according to a statement issued by John E. Alexander, president. This was especially true for the first three-quarter period.

"The continuation of the policy to create and produce new paper products of a specialty nature has been carried on with intensity," said Mr. Alexander. "In addition to the manufacture of our regular line of wrapping papers, specialties and specification papers, the program which was launched several years ago in the development of our watermarked or fine grades has progressed satisfactorily.

"Through the establishment of merchant distributors throughout the country, we are daily strengthening our volume of operations along these lines. Many new capital expenditures have been made in our plants throughout the year, which improvements we have deemed necessary in order to keep abreast of the times and help us to increase efficiency by cutting manufacturing costs and improving our papers.

"A most intensive advertising program has been conducted throughout the year on both our coarse and fine papers, which has been carefully planned and intended to bring into the limelight before the trade the products we have to offer. On a percentage volume of operation for the year, we have compared favorably with other periods, attempting at all times to give our men as many hours of work as possible.

"The present day conditions are none too encouraging inasmuch as the recession of business lately has been the most precipitate in history. General business indices and statistics show that in the past three months we have lost three years' gain of business volume. We are back to a 64.5 per cent of normal business volume, having rapidly slid away from a high point of 81 per cent. Nothing did it but the final collapse of all confidence in the political panaceas propounded by the New Dealers. What is needed is men at Washington who recognize the gravity of the situation and can see the unmistakable registered evidence of the immediate need of a right-about face.

"Therefore, although general business conditions are depressed today and the immediate outlook is none too favorable, we must recognize there are indices on the horizon which should tend for better times and prosperity."

Nekoosa-Edwards Increase Power Distribution

An eight per cent increase in power distribution was shown by the Nekoosa-Edwards Light and Power Company, Nekoosa, Wis., during the last year. The company is a subsidiary of the Nekoosa-Edwards Paper Company, and markets current from the paper mill power plants as well as conducting water distribution. Numerous extensions of power lines have been made into the rural districts during the last year. J. E. Alexander is president of the company, E. P. Gleason is vice-president and manager, and C. A. Jasperson is secretary-treasurer. The officials and employees divide their time between the paper company and the utility.

Federal Power Commission Postpones Hearing

The Federal Power Commission at Washington has postponed for one month a hearing scheduled January 10 on a proposal by the Wisconsin Public Service Corporation to rebuild a power plant and timber and rock fill dam on the Wisconsin River at the site of the former Tomahawk Pulp and Paper Company near Tomahawk, Wis. The Wisconsin Public Service Commission asked the extension after entering the case to show the Federal commission has no jurisdiction over the proposed development.

Fifty Million Trees Planted by C.C.C. in Wisconsin

Approximately 50,000,000 trees were planted in Wisconsin by the Civilian Conservation Corps, according to Robert Fechner, director. An average of 76 camps were operated, with 16,911 men participating. Operating costs amounted to $13,253,271.43. The crews completed 371 miles of truck trail and minor roads; 28 lookout houses and towers; 240 miles of telephone line, and cleared other roads and trails. These accomplishments are designed to cut forest fire losses, which were reduced to a minimum by having CCC crews available to fight them. The enrollees spent 100,000 man days fighting fires during the year.

During the last year, the Nicolet and Chequamegon National Forests in Wisconsin were enlarged by 812,033 acres. Total plantings covered 40,372 acres. The forest service has its eye on 12,000,000 to 15,000,000 additional acres in the Wisconsin, Minnesota and Michigan areas that it expects to acquire for forestry purposes eventually. Field service has revealed 50 per cent more timber volume in these states than was previously supposed. The big problem is to husband it until second growth reaches maturity. The United States Forest Products Laboratory at Madison, Wis., is cooperating with the forest service in its research to find greater wood utilization and new processes.

Speakers at Lakes States TAPPI Meeting

Dr. B. L. Browning and Dr. J. A. Van den Akker, research associates of the Institute of Paper Chemistry, Appleton, Wis., will be the speakers at a meeting of the Lake States section of TAPPI Tuesday evening, January 11, following a dinner at Conway hotel, Appleton. Dr. Browning's subject will be "Identification of Dirt Specks in Paper," and Dr. Van den Akker will speak on the "Behavior of Fibers in Flowing Stock Suspensions." The latter will discuss work under way at the Institute to obtain more fundamental knowledge of the factors influencing fiber dispersion and orientation.

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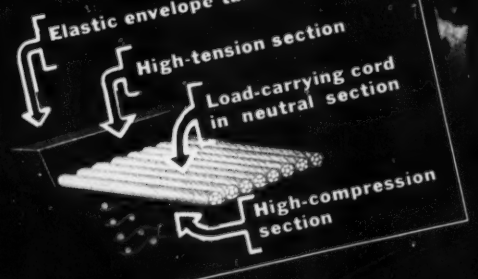

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Plan for Deep Inland Waterway Condemned

International Joint Commission for Proposed Montreal-New York Canal Reports Expense Not Warranted Now — Route Important for Newsprint Transportation—Anticosti Island Deal—Newsprint Output Lower

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 10, 1938.—The plan for the proposed deep inland waterway between Montreal and New York, via the Richelieu river, Lake Champlain and the Hudson river, has been condemned in a report by the International Joint Commission, which finds that the expense would not be warranted, "at least until the St. Lawrence seaway is an accomplished fact."

This canal, if it were constructed, would have important bearing on the transportation of newsprint from Canada to New York and other points. At present quantities of newsprint are transported during the season of navigation, via the Richelieu river, where it enters the St. Lawrence at Sorel, and the Chambly Canal to Lake Champlain and the Hudson River. The Chambly Canal is shallow, having a depth of 6 ft. 5 inches, but it is being increasingly used by newsprint, a number of specially built vessels for the carriage of newsprint having been put on the route in recent years.

For the proposed deep canal five different routes were suggested, four of them cutting across country from positions in the neighborhood of Montreal to connect either with the Chazy river or the Richelieu river and one to deepen the present route via Sorel and St. Johns, Que. The estimated cost varied from $410,243,000 to $316,806,000, none of the estimates including the costs of deepening Lake Champlain and the canal system to Troy, N. Y. The commission holds that the carrying charges of even the least impracticable route from an economic point of view under present conditions would be much greater than the saving in transportation costs.

The commission suggested that their report be considered an interim one, and that it be given jurisdiction to revive the inquiry should the two nations decide to go ahead with the St. Lawrence seaway.

All the witnesses, the report stated, agreed that a deep waterway between Montreal and New York would not be economically feasible if ocean boats were unable to reach the Great Lakes. Under existing conditions the carrying charges of the undertaking would be much greater than any resultant saving in transportation costs.

Germans and the Anticosti Deal

Dr. Heinrich Woollert, the last remaining member of the German commission of forestry and wood pulp experts who have been investigating possible sources of wood pulp supply in Canada, left Montreal during the week for New York. While he stated that "the deal is by no means off," he gave no indication as to whether or not the timber rights on Anticosti Island, which the commission had been especially investigating, had been, or would be, purchased by the German interests.

The previous statement to the press, following the story of the intended purchase of the island from the Consolidated Paper Corporation. Dr. Woollert had stated the commission was "without obligation to purchase, especially the whole of Anticosti Island."

Premier Maurice Duplessis had stated his intention of not allowing exploitation of the island by outside interests, but for the past month a corps of forestry experts has been inspecting the island as well as other eastern sites, and reporting to Dr. Woollert in Montreal.

Commanding as it does the entrance to the St. Lawrence River, Anticosti has frequently been alluded to as possessing considerable strategic importance. The fact that it was completely in the hands of private individuals caused considerable criticism at the outbreak of the Great War.

The island was recently referred to by a speaker at a Canadian Legion branch function in Montreal as "3,200 square miles of pure strategy."

Newsprint Output Drops

As expected, the production of newsprint in Quebec and Ontario is showing a sharp reduction, operations for the industry as a whole now ranging from 50 to 60 per cent of capacity. To achieve the desired contraction in production, newsprint companies are adopting one of or a combination of three methods: cutting operations to a 3-day week, reducing the number of machines in operation, or running machines at a slower speed. Several factors, such as power contracts, etc., determine the method employed by individual companies, it is said. Operations will be continued on this sharply restricted basis during January. February's prospects as to shipments will determine that month's operating rate.

Pratt Case Is Settled

[FROM OUR REGULAR CORRESPONDENT]

BOONVILLE, N. Y., January 10, 1938.—Announcement is made here that a $60,000 settlement made by the estate of the late Charles W. Pratt, who died in 1934, to his widow terminates the court litigation brought by Mrs. Pratt to recover 1,500 shares of Moyer & Pratt, Inc., paper company stock. The suit was brought against the Charles W. Pratt estate and Walter Pratt, son of the deceased paper manufacturer. Shortly after the death of Mr. Pratt, the plaintiff, his second wife, demanded the delivery to her of 1,500 shares of the capital stock of the Moyer & Pratt Company, explaining that prior to the death of her husband he gave her the shares but she returned them to him for safe-keeping. She alleged that Walter Pratt replied that there was no longer any stock of the company in her name. Soon afterward in 1934 she began her suit to recover the shares or their value but various appeals prevented the case from ever reaching trial and a few weeks ago negotiations were started by the defense looking towards a settlement. It was said that although the value of the shares was placed at a high figure when the suit was started in 1934, that estimate is far above the value determined by the settlement.

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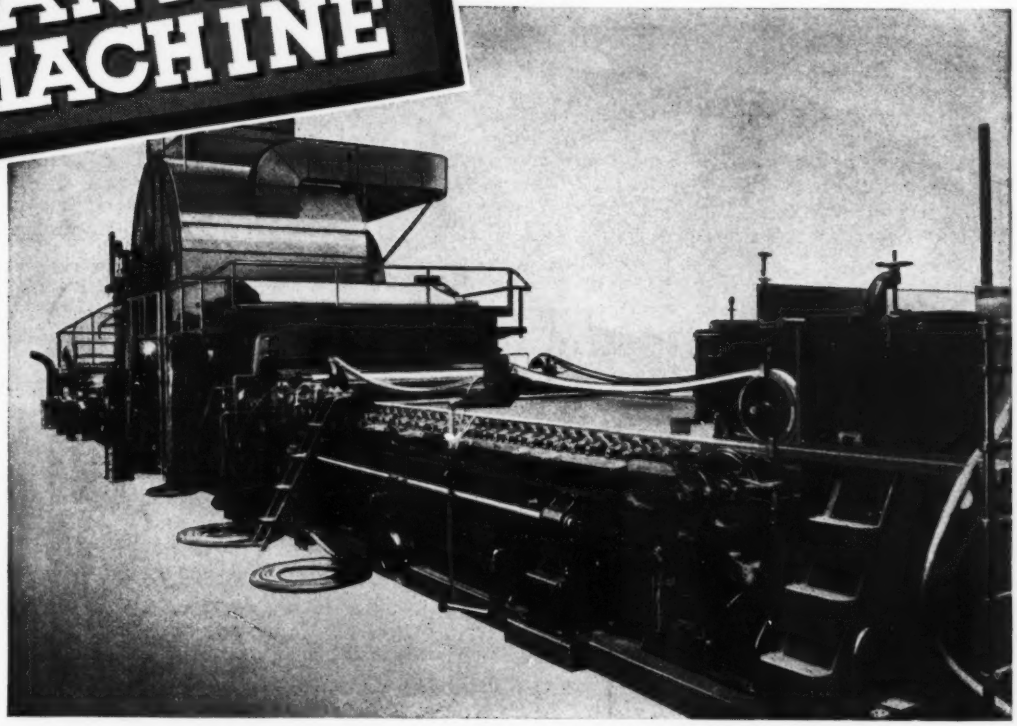

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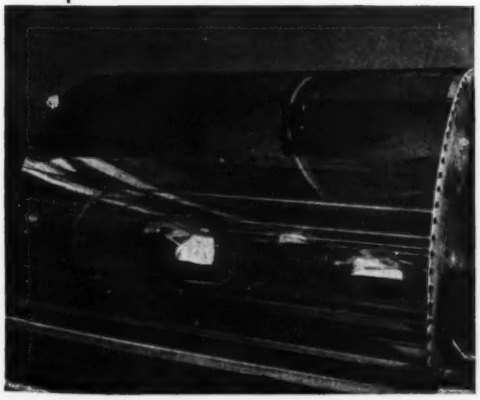

Beloit has developed a special alloy metal and special grinding and polishing process to produce the close grained, hard mirror finish shown in this photograph. This is a result of Beloit's many years of experience in building practically all the Yankee machines in this country.

Beloit has also recently developed a high pressure Yankee dryer to meet the demand for maximum production.

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Chicago Trade Sustained by Firm Prices

Sharp Upturn In Demand In Midwest Area Recedes As Inventory Requirements Are Met — Review of Waste Paper Industry—Illinois Adopts Safety Rules — Midland Paper Co. To Handle Nekoosa-Edwards Line.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 10, 1938.—The local paper markets experienced a comparatively sharp but short-lived upturn in demand for the first day or so of the week but, after inventory requirements were met, the market slid back to its recent "status quo" position. Prices however, are reported to have remained firm and there is still plenty of indication that the paper industry, through wise application of coordinated and systematic association work, is faring better than many other industries and, accordingly, has a brighter outlook.

Specifically, the local markets are little changed. Waste papers seem to have reached low ebb and there are scattered reports that demand may soon be forced to show itself in these markets. The bond market is quiet after a short-lived flurry of demand immediately after the turn of the year. Those interested in sulphite grades have their eyes turned toward the Chicago meeting this week. Bonds and ledgers in general show little desire to make the news. Books and covers are likewise quiet. Newsprint demand is reported to have quieted down following the pre-January buying though this market and the ground wood market seem to present a comparatively bright picture. Paperboard reports show a belief that the normally improved first period of the year may again show itself shortly.

Review of Waste Paper Industry

It is interesting to note the review of the waste paper industry locally as described in the year and analysis supplied by the *Chicago Journal of Commerce*. It reads: "Waste paper for a time, like other commodities, enjoyed a profitable position in the early stages of last year. In the opinion of dealers, business was the best for the waste paper industry since 1930. April was the banner month, prices having climbed $3 to $4 per ton for the common grades as compared with January prices. Toward the latter part of April, the abundance of waste paper caused prices to decline and by the middle of May reductions of $3 per ton were recorded from the April levels. While most of the grades continued to reduce in price, old containers managed to sustain their hold from July to September. Mill prices were drastically reduced during the summer months, but September witnessed a restoration of mill prices in anticipation of fall business. New orders, according to reports, failed to materialize in the volume expected and dealers found mill prices lowered for the remaining three months of the year. December represented the lowest month for 1937."

Illinois Adopts Safety Rules

The Health and Safety rules worked out by a committee representing both employer and labor groups under the Health and Safety laws of the State presented preliminary rules at a public hearing on January 4 at which time only very minor changes were made. Thus the paper industry operating in Illinois —and interested in what are considered model preliminary rulings for the nation as a whole—may obtain rules, to go into effect in about three months, covering paper punches, paper cutters, cutters and creasers, calender rolls and paper slitters. These may be obtained by writing Mr. Peter Angsten, Industrial Commissioner of Illinois, 205 West Wacker Drive, Chicago.

Crane Co. Adds New Engineering Division

A new division of engineering and research has recently been established by the Crane Company of Chicago, according to information released by Mr. C. B. Nolte, president of the plumbing and heating concern. The new division will coordinate the now existing divisions of research and development and the production engineering departments. L. W. Wallace, head of research for the Association of American Railroads for the past three years, is to be the new director of the division. Prior to his connection with the Railroad Association Mr. Wallace was with the W. S. Lee Company. He will direct the work centering around the origination of new lines, new products, patents and development procedure.

Midland to Handle Nekoosa-Edwards Line

An item of more than ordinary interest to the paper trade in general, centers around the reported announcement that the Midland Paper Company, division of the Zellerbach interests, has discontinued the handling of the Howard Bond lines and will substitute in their stead the line manufactured by the Nekoosa-Edwards Paper Company known as Nekoosa Bond, including several new lines recently introduced by that company. Nekoosa Pre-Tested Business Paper include Nekoosa Bond & Ledgers, Mimeo Bond and John Edwards Bond. The Howard line has been taken by the Blundon-Lyon Paper Company which means that three jobbing firms will continue to represent Howard Bond in this city including Parker Thomas & Tucker, Moser Paper Company and the recently added Blundon-Lyon outlet. The Butler Paper organization will act with the Midland organization as the Nekoosa representatives in this territory. The changes were reported by all parties to be in line with a more comprehensive sales representation in this locality.

National Safety Congress to Meet Next October

Paper manufacturers in the middle western states who have always evidenced a keen and practical interest in safety work, will be interested to know that the 1938 National Safety Congress is to be held in Chicago at the Stevens Hotel on October 10 to 14. It will be the Silver Jubilee celebration of the twenty-five year organization and more than 2,000 sessions are to be held and 400 speakers featured in the four day program which will attract safety leaders, including many technical men from the paper industry.

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[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 10, 1938.—Carter, Rice & Co. Corporation, is issuing an attractive booklet, 8½ x 11½, containing 16 pages, copiously illustrated, describing the new location of the firm at 273 Summer street. The new home of the company is a seven story, brick and concrete building, fronting on Summer street, extending through to Melcher street, combining every modern facility for the storing and quick dispatching of paper. The main floor is of very ample proportions.

Customers' Reception Room

The booklet shows the customers' reception room. Information or samples may be quickly obtained at the counter which houses the complete sampling system for all warehouse merchandise. Just beyond, within easy access, is the Sales Service Department, where sample sheets, blank dummies or printed specimens, classified for easy reference, are always available. A picture is shown of the inside section of the sampling counter and filing unit, which contains every item of merchandise carried in the Boston warehouse.

Included in the photographs is one of a group of some 20 salesmen at their desks and also a picture of the sales manager discussing a problem with a member of the sales force.

The merchandising department is illustrated, with executives busy at their desks.

The Main Office

In a section of the main office is located the clerical staff, combining the billing, cost, credit, inventory, mailing, purchasing and stenographic departments. In another section is the telephone order department, which is equipped with master stations for voice amplifying and a pneumatic tube system connecting with all warehouse floors and shipping room.

A main aisle through one of the warehouse floors is shown, with sturdy, steel shelving occupying all available space. On all other stock floors is additional steel shelved space. Suction cleaners, electrically motored and portable, have been installed for the frequent removal of floor and shelf dust. One of the features of the warehouse is the voice amplifying loud speaker apparatus, which is shown, permitting two-way conversation between office, shipping room and all warehouse floors. It is a marvel of efficiency, enabling stock men to converse with all points in the entire building from any point on the floor they may be when the call comes.

Spiral Chute Conveyor

To the shipping room from all warehouse floors above comes a spiral chute conveyor, facilitating the prompt delivery of stock from all warehouse sections. Inside of the chute enclosure, another conveyor with a twenty-five pound capacity, feeds from each floor to the office floor, speeding up the delivery of sample sheets to customers from the warehouse sections. In addition to the chute is an interior view of the loading platforms with stock being rapidly transferred to waiting trucks, and also a view of the shipping room, where the wrapping and bundling of merchandise is expertly handled by efficient men.

Serving the large shipping room on the Melcher street side of the basement floor are three large enclosed platforms which allow trucks to back in clear of the sidewalks for simultaneous loading or unloading. Freight elevators located on either side of the building facilitate also the movement of incoming and outgoing shipments. A large area, directly opposite, provides ample parking space for customers.

Regular trips throughout the metropolitan area of Boston are made daily by the company's delivery trucks, seen in a photograph. More than 50,000 miles are covered by these trucks annually in the delivery of merchandise from the Boston warehouse.

The booklet contains pictures of Charles A. Esty, president; Hubert L. Carter, treasurer, and Frank H. Winter, secretary and sales manager.

A map shows the new location and many streets of Boston.

History of the Company

The booklet includes a brief history of the company, established in 1871, making it one of the oldest paper house in the United States. Starting at 13 Spring Lane, the business was soon removed to larger quarters at 69 Federal street, where it took on a remarkable growth which made the company a leader in its field, and later compelling another removal to 250 Devonshire street.

At this location the company grew and prospered for more than 50 years.

Story of a Fourdrinier Manufacturer

George Sumner Barton, third generation of the family to head Rice, Barton & Fales, Incorporated, points out that a book entitled "A Line of Men One Hundred Years Long," just issued by the concern and written by Mr. Barton, is intended to mark the hundredth anniversary of the concern's existence.

Men, continues the author, not machines, are really responsible for the success of Rice, Barton & Fales. Hence he stresses the fact that the book "is an anniversary of men and the work that men have done." With this as its theme, 25 of the book's 76 pages are devoted to candid camera photographs of men employed by the firm as far back as 50 years ago.

Founded in 1836 at Worcester, Mass., by Henry P. Howe and Isaac Goddard, the concern is still located in the same city. The original partnership of Howe and Goddard underwent many changes until the present corporation came into existence in 1867 under the name of Rice, Barton & Fales Machine and Iron Company. The name remained unchanged until 1922, when it was shortened to Rice, Barton & Fales, Incorporated.

Philadelphia Forms "Dollars and Sense Club"

Recession Causes Wrapping Paper Houses To Organize for Purpose of Restoring Confidence — T. H. B. Smythe Is Elected President — J. R. Halkyard of Providence Paper Co. Delivers Lecture In Salesmen's Course.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 10, 1938. — A group of representatives from Philadelphia wrapping paper houses met for dinner at a local restaurant on December 16, with the main purpose of bringing back again as much of the lost confidence as possible that had so badly come into the picture with this group of competing, but, nevertheless, fellow merchants.

At this first meeting there were no particular aims and only fond hopes, but as the meeting progressed, it was decided to appoint a chairman, secretary and treasurer, and as a result the following were elected: T. H. B. Smythe, president, J. L. N. Smythe Company, chairman; George K. Hooper, president, Hooper Paper and Twine Company, Inc., secretary, and Lee Johnson, D. L. Ward Company, treasurer.

The chairman was instructed to appoint commodity committees to helpfully analyze for the members of the group the different grades of paper sold, and to offer any other statistical information that would be helpful.

It was definitely understood at this meeting that the group would, in no way, be competitors with the local paper organizations, namely the Paper Trade Association of Philadelphia, or the Philadelphia Paper and Cordage Association, and that the nominal yearly dues of $3.00 were merely to cover postage and other slight incidentals in defraying expenses necessary for calling members together for their meetings.

Committee Chairmen Appointed

The second meeting was held on January 6, and at this time the chairman announced the appointments of committee chairmen and the members to serve on each committee. The chairmen appointed are: PLANNING COMMITTEE—N. Saxe, Saxe Paper Company, Inc.; GUMMED TAPE COMMITTEE—Lee Johnson, D. L. Ward Co.; WRAPPING PAPER COMMITTEE—N. Saxe, Saxe Paper Company; TISSUE COMMITTEE—H. Lefkowith, S. Walter, Inc.; SUPER-JOBBER AND RAG COMMITTEE—L. L. Gerber, Enterprise Paper Company; SPECIALTIES COMMITTEE—George K. Hooper, Hooper Paper and Twine Company, Inc.

At this second meeting, it was decided in view of the fact that this group is definitely non-competitive with any paper trade association and merely interested in fact-finding, that the name be given to it would be "The Dollars and Sense Club." Another meeting is scheduled for January 20. Dates of subsequent meetings will be announced later.

The Membership

Enrollment thus far in the membership includes: D. L. Ward Company, represented by Lee Johnson; Atlas Paper Products Company, represented by Jacob Zacher; Wm. J. Cairns, 1023 Dauphin street; Diamond Paper and Bag Company, represented by B. M. Zieve; Dubin Paper Company, 34 N. Delaware avenue; A. Goldman, 244 N. Juniper street; B. Kessler Paper Company, 7 N. 2nd street; Progressive Paper Company, represented by Harry A. Clair; Quaker City Paper Company, represented by W. B. Killhour; Wilder Brothers, represented by Charles Wilder; L. Resnick and Sons, represented by Chas. Resnick; Schwartz and Company, represented by Samuel Schwartz; Terminal Paper Company, represented by Cecil Bentley; Enterprise Paper Company, represented by L. Gerber; Garrett-Buchanan Company, represented by Joseph Weaver and Richard Smith; Hooper Paper and Twine Company, represented by George K. Hooper; E. Latimer, Jr., 126 N. 4th street; Mather Paper Company, represented by Chas. W. Mather; Paper Manufacturers Company, Inc., represented by Vincent A. Dirvin; Saxe Paper Company, represented by Nathaniel Saxe; S. Walter, Inc., represented by Harry Lefkowith; Huff Paper Company, represented by Frank T. Hufnal; Penn Paper and Stock Company, represented by W. E. Williamson; J. L. N. Smythe Company, represented by T. H. B. Smythe.

Paper Trade Association Meets

On Tuesday last, the Paper Trade Association of Philadelphia held the fifth in its series of twelve lectures in the Paper Salesmen's Study Course in the Franklin Institute. W. B. Killhour, president, Quaker City Paper Company, and Chet A. Spaulding, assistant secretary of National Paper Trade Association of the U. S., Inc., presided. "The Romance of Wrapping Paper" was the subject assigned to J. R. Halkyard, vice president of Providence Paper Company, Providence, R. I., who was guest speaker, and there was unanimity of opinion that Mr. Halkyard acquitted himself admirably.

Need for Training Salesmen

After citing some very interesting experiences as an embryo paper salesman thirteen years ago, he stressed the necessity for training salesmen, and he added that as chairman of the Merchandising Committee of the National Paper Trade Association, he has advocated that training of salesmen be placed on the agenda for discussion at the National Convention in February. He pointed out that Philadelphia has always seemed to be able to provide leadership for new ideas, and the fact that the Paper Trade Association of Philadelphia has undertaken the inauguration of this Paper Salesmen's Study Course was no exception, but should serve as an inspiration for others to do likewise. After emphasizing the value of cooperation he presented some concrete information regarding the elementary principles of computing comparative weight and methods of determining yardages.

With all the mastery he could summon, he said: "What do we mean by 'Romance of Wrappings?' Isn't the wrapping paper business just an ordinary business—just an ordinary business of buying and selling paper?

"It is, if we want to make it so, but to those men who possess a little more than average busi-

ness acumen and a vision capable of discerning the broader scope, it is a business filled to the brim with romance."

The Indispensability of Paper

Continuing in the same vein, he outlined the indispensability of paper in our domestic and business lives, and in connection with this he said that the wrapping paper salesman imbued with vision and imagination who makes it his business to learn the many purposes for which it is used is a researcher, and as such he not only enhances his value to his firm but his pay envelope reflects this sincerity of purpose to a substantial degree. Innumerable uses of kraft paper, sulphite wrapping paper, manila, wrapping tissues and paper towels were discussed at length. Digressing for a few minutes, Mr. Halkyard took up the subject of the uses of paper in agricultural districts; he admonished his listeners to keep well posted on mulch paper, which, while still in its infancy, he said is being extensively used in the agricultural districts.

Paper in the Textile Industry

Mr. Halkyard's discussion on the types of paper most commonly used in the textile industry brimmed with romance, but "Closely allied with the textile industry," said Mr. Halkyard, "are the makers of paper cones, tubes and spools but because of the many technicalities entering into the pasting, drying and finishing of the tubes, many of the papers in this industry are special."

As though he had not exhausted every phase of Romance in the Wrapping Paper Industry, Mr. Halkyard took his audience on an imaginary trip planning and building one's own home, pointing out the important part paper plays in many improved building materials and the enhancements of beauty and individuality to each and every room by the use of decorative wall papers.

In closing, he said: "If you want to enrich yourself in the paper business, first be sure that you really want to sell paper. Don't be a copier, be original. Be constantly on the alert to suggest new uses for paper. Have faith in yourself. If it's paper that's made, you can sell it. If it hasn't been made, make it."

Government Paper Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 12, 1938. — The Government Printing Office has received the following bids for 20,000 pounds of treated traveling tympan paper in 39-inch rolls; L. Hyman & Sons, 7.75 cents; Cromwell Paper Company, 7.5 cents less 2 per cent; and Enterprise Paper Company, 7.416 cents less 2 per cent.

For 5,000 sheets (965 pounds) of buff sulphite index paper: Stanford Paper Company, $22.50 per M sheets; Whitaker Paper Company, $19.96 and $20.27.

For 24 x 36 white cloth lined paper: Stanford Paper Company, $94.50 per M; Walker, Goulard, Plehn Company, $94.70 less 2 per cent; Barton, Duer & Koch Paper Company, $92.76; Whitaker Paper Company, $92.57; Mathers-Lamm Paper Company, $93.18; R. P. Andrews Paper Company, $95.54; and Reese & Reese, Inc., $92.53.

Public Printer Reports on Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 12, 1938.—In making his annual report to Congress last week, Public Printer A. E. Giegengack had the following to say in connection with paper purchases for the past year:

By closely watching the paper market and the trends therein and by the placing of orders for standard stocks at the most opportune time as indicated by such trends, an actual saving of $35,365.08 was effected during the year.

Proposals for paper were sent in October, 1936, to approximately 150 firms for the 6-month term beginning January 1, 1937, and in April, 1937, for the 6-month term beginning July 1, 1937, which resulted in the placing of 24 contracts for the first 6-month period and 18 contracts for the second 6-month period. Proposals for envelopes for the year beginning July 1, 1937, were issued in April to approximately 50 prospective bidders, resulting in the placing of 6 contracts.

In my report for 1936 I stated that the proposals for paper for the public printing and binding and for blank paper for use by the several executive departments and independent establishments of the Government located in the District of Columbia for the 6-month period beginning January 1, 1937, carried a definite provision for its delivery on skids, instead of being packed in wooden cases, of over 18,000,000 pounds of book, lithograph, mimeograph, sulphite writing, sulphite bond, and 25 per cent rag bond papers, and would result in a considerable saving to the Government. I am happy to report that this method of packaging paper resulted in a saving of over $28,000 during the past fiscal year. Not only did this method of packaging of paper result in the saving of $28,000 in the cost thereof during the past fiscal year, but it also eliminated the work of six laborers who were used in the breaking up of the wooden cases and the hauling of this scrap material to the front of the H Street building for delivery to the contractor handling the same.

German Pulpwood Demand Increases

The question of raw material supplies presents one of the leading problems in the German paper industry. Pulpwood is in demand in ever increasing quantities not only by the paper industry but also by the staple fiber industry. State and private forestry interests are making strenuous efforts to meet the enormous demands for pulpwood. It is reported that deliveries from the forests are rising from month to month and that these efforts are meeting with a wholesale support from consumers who are now willing to accept qualities which would formerly have been refused. In line with these efforts the policy of curtailing imports of pulpwood has continued, receipts during the first 9 months of the current year amounting to only 1,129,932 metric tons (metric ton—2,204.6 pounds), as against 1,781,517 metric tons during the corresponding period in 1936. Soviet Russia is still the most important source for this material although imports from that country have appreciably declined, as well as have imports from Finland and Czechoslovakia. In the meantime, Austria and Latvia have assumed an increasing importance this year.

Financial News of Pulp and Paper Industry

Lake St. John Power and Paper Makes Provision To Pay Interest and 6 Per Cent Dividend On Preferred — President Dahlberg Defends Celotex Deal — Masonite Corp. Reports A Profit of $339,846 In Sixteen Weeks.

New York Stock Exchange

High, Low and Last for the Week Ending January 12, 1938

	High	Low	Last
Armstrong Cork Co.	39	33¾	39
Celotex Corp.	25½	23½	23½
Celotex Corp., pf.	59	58	58
Certain-Teed Products Corp.	8⅛	7¾	8
Certain-Teed Products Corp., pf.	30¾	26¾	29
Champion Paper & Fibre Co.	30⅜	30	30¼
Champion Paper & Fibre Co., pf.	104	103⅞	104
Congoleum-Nairn Co.	24	23¼	24
Container Corp. of Amer.	15⅜	13	15
Continental-Diamond Fibre Co.	9	7⅞	9
Crown-Zellerbach Co.	12¼	10½	12¼
Flintkote Co.	17⅝	16½	17
Robert Gair	4¾	4⅛	4⅜
Robert Gair, pf.	16	14½	16
International Paper & Power	9⅞	8¼	9¾
International Paper & Power, pf.	38½	33½	38½
Johns-Manville Corp.	86	78	84½
Johns-Manville Corp., pf.	124½	123	124½
MacAndrews & Forbes	31	30½	30½
Masonite Corp.	37¼	34⅞	36¾
Mead Corp.	15	12½	14¾
Mead Corp., pf.	69	53	54⅞
Paraffine Companies, Inc.	39	37	39
Ruberoid Co.	23¾	21¼	23¼
Scott Paper Co.	39	38	39
Sutherland Paper Co.	20	19	19½
Union Bag & Paper Corp.	12½	9¾	11¾
United Paperboard Co.	5⅞	4⅞	5½
U. S. Gypsum Co.	71½	67½	69½

New York Curb Exchange

High, Low and Last for the Week Ending January 12, 1938

	High	Low	Last
American Box Board Co.	10	8¼	9⅝
Brown Co., pf.	31	26½	28½
Great Northern Paper	32¾	32	32¾
St. Regis Paper Co.	3⅞	3¼	3⅞
St. Regis Paper Co., pf.	58	56½	58
Taggart Corp.	5½	4	5⅛

St. John to Pay Interest and Dividend

MONTREAL, Que., January 10, 1938.—At a meeting of the Lake St. John Power and Paper Company, Limited, held in Montreal, resolutions were adopted providing for an interest payment of 5 per cent on the mortgage debentures and for a dividend distribution of 6 per cent on the preferred stock. These payments, while chargeable against 1937 earnings, will be made April 1 in the case of the mortgage debentures and May 1 in the case of the preferred stock. All of the preferred stock of Lake St. John Power & Paper Company, Limited, is owned by St. Lawrence Paper Mills Company, Limited.

While the financial statement of Lake St. John for the year 1937 has not been finalized, it is anticipated that the balance sheet will show a strong financial position, that earnings for the year will be substantially better than 1936, and that a moderate balance will be earned on the common stock after providing for the above mentioned debenture interest and preferred dividend payments.

Defends Celotex Deal

Declaring that he personally had negotiated the terms of the Celotex Corporation's proposed acquisition of a large stock interest in the Certain-teed Products Corporation from the Phoenix Securities Corporation, Bror Dahlberg, president of Celotex, charged last week that the banker-critics of the deal were judging the merits of the company's expansion plans by day-to-day stock market fluctuations. Criticism was voiced by Distributors Group, Inc., underwriters.

"First," wrote Mr. Dahlberg in a letter to the president of Distributors Group, "you suggest that the proposed terms represent an excessive premium over the stock market quotations on Certain-teed shares on Jan. 3. Second, you suggest that Celotex should not consider a costly outlay of $567,760 during the next five months, because the business outlook is disturbed by uncertainty. I cannot resist the conclusion that * * * you are thinking in terms of the stock market while I am thinking in terms of productive industrial operation. * * * Maybe the time has come for some business man to say that a given day's stock market quotation does not necessarily represent the real value of an issue."

Masonite Corp. Reports Profits

The Masonite Corporation for the sixteen weeks to December 18 reports net profit of $339,846, equal to 58 cents each on the outstanding common stock, compared to $376,365, or 63 cents a common share on the stock outstanding at the close of sixteen weeks ended December 21, 1936, according to a corrected statement announced last week by R. G. Wallace, vice president.

Celotex Buys Gypsum Assets

The Coletex Corporation has purchased the entire capital stock of the Gulf Gypsum Company of Houston, Texas. The company has large gypsum deposits at Falfurias, Texas, and contemplates building a large wall board mill on the Gulf Coast this year. Celotex already has a large plant in New Orleans where it manufactures insulating board from sugar cane fiber.

Mt. Holly Paper Co. To Reorganize

The petition of the Mt. Holly Paper Company, at Mt. Holly Springs, Pa., to reorganize under Section 77B of the federal bankruptcy act has been approved by Federal Judge Albert W. Johnson of Lewisburg B. Frank Snyder, Esq., was appointed trustee. A reorganization plan was ordered filed by March 1.

Albany Felt Co. Elects Officers

ALBANY, N. Y., January 10, 1938.—The annual meeting of stockholders of the Albany Felt Company was held this week at which officers for the year were chosen. Officers elected include Parker Corning, president; Charles P. Drumm, vice president, and Frank D. Cowdery, secretary.

Charles J. Hendricks Resigns

EAU CLAIRE, Wis., January 10, 1938.—Charles J. Hendricks has resigned as vice president in charge of sales of the Sterling Pulp and Paper Company, of this place.

IT'S WHAT'S INSIDE THAT COUNTS!

"X-RAYING" THE GOODNESS OF DESIGN

Before the design of a valve body is approved, the photo-elastic test pictured above is made on a plastic model in order to determine visually and accurately where and how stresses will make themselves felt all the way through the valve. Crane engineers don't merely *hope* that Crane valves will stand up—they *know* they will.

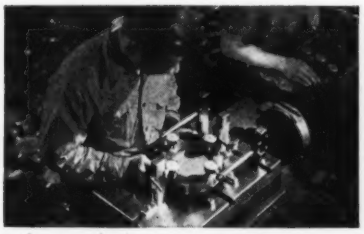
—and that goes for

CRANE VALVES for Pulp and Paper Mills

A good-looking surface is mighty tempting to the eye—but it's the goodness *inside* that proves the quality, whether you're talking of apples or valves; and the "inside" story of Crane valves is one of uncommon quality all the way through. Crane makes sure of that quality by careful engineering, by direct laboratory control of raw material selection, by modern production technique, and by the most complete and exacting system of checks and tests used in the industry. Use Crane valves and learn how these assurances of quality are proved in length of efficient, dependable service for you.

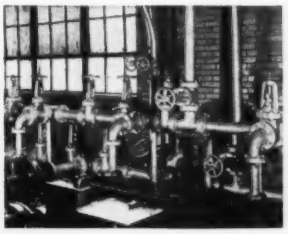
IS THE METAL RIGHT?

Before any metal can be accepted for use in Crane valves, it must be approved by the metallurgical laboratory. Test samples from every shipment of raw material as received are subjected to precise metallurgical scrutiny. Thus Crane goodness is assured from the outset—and at every step in their manufacture, the quality of Crane valves is guarded by the laboratory technician.



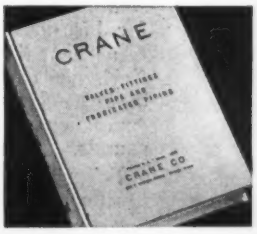
"EYES THAT CAN'T BE FOOLED"

Dimensions at Crane are checked on every valve. Here, for instance, the taper of a wedge gate is checked for the accuracy that will mean sure fit and long life when the valve gets into service. The average Crane valve passes over 40 inspections and tests to make sure that its goodness is uniform throughout.



THE GREATEST LABORATORY OF ALL

For three generations of actual service, Crane valves have been proving that they are good all the way through in millions of locations. Only Crane has so vast an accumulated experience in producing valves of known quality, of predictable performance in service.



If you want uncommon quality in valves of common use, look in the Crane No. 52 Catalog. In its 764 pages there are 38,000 piping items. Quick delivery is assured from a nearby stock. You will find Crane service, like Crane products, good all the way through.

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VALVES • FITTINGS • PIPE
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NATION-WIDE SERVICE THROUGH 134 BRANCHES AND MORE THAN 500 WHOLESALERS

Dr. Heuser Joins Institute of Paper Chemistry at Appleton

One of the most outstanding appointments which it has been the privilege of the Institute of Paper Chemistry to announce in recent years is that of Professor Doctor Emil Heuser as Research Associate and Instructor in Cellulose Chemistry, who will assume his duties at the Institute on March 1, 1938. Dr. Heuser brings with him an unusual combination of theoretical and practical knowledge, both of cellulose chemistry and pulp and paper making, as well as of rayon and its manufacture, gained from years of study and teaching and also from actual contact with these industries in Germany and Canada.

It is of particular significance that he should join

DR. EMIL HEUSER

the Institute staff at a time when the production facilities of the paper industry are increasing at an amazing rate and when one of the most important solutions of the problems presented by such increased production will probably be found in the further application of pulps of all kinds to other than normal uses, i.e., paper making as such.

Dr. Heuser's early training was obtained at the Technical Universities of Munich and of Karlsruhe, where he studied under such well-known chemists as Bunte, Engler, Haber, and Le Blanc. He worked for his doctor's thesis at the University of Graz (Austria), thereafter returning to the University at Karlsruhe to obtain his doctor's degree under Scholl in 1909. His dissertation was concerned with an experimental study of certain complex organic compounds.

Following his graduation, he spent three years in practical work in various paper mills in Germany and Austria. In 1912 he received a call to the Chair of Cellulose Chemistry at the Technical University of Darmstadt, made vacant by the appointment of Professor Schwalbe, then the leading exponent of cellulose chemistry in Germany, to the Forest Academy of Eberswalde. In Darmstadt Dr. Heuser gave lectures on organic chemistry, on the chemistry of cellulose, and on the chemical technology of pulp, paper, dyes, textiles, etc. With the assistance of his graduate students, he carried on many original investigations both on the theoretical and practical sides of cellulose, lignin, and non-cellulosic carbohydrates, as well as on pulping, bleaching, and problems pertaining to the manufacture of paper.

During the period 1916 to 1918 he was engaged in a study of the industrial utilization of cellulose and other wastes, the main problems considered being the fermentation of sulphite waste liquor, the production of methyl alcohol, acetone, and other solvents by the Rinman process, and the manufacture of furfural from wood waste and straw.

Dr. Heuser resumed his duties at the University at Darmstadt in 1918, where he remained until 1923. The next three years were spent as Director of Research of the "Vereignigte Glanzstoff-Fabriken" (manufacturers of rayon and photographic films), during which time he was also honorary professor of cellulose chemistry at the University of Berlin in Charlottenburg.

In 1926, when the manufacture of rayon pulp became a pressing problem in North America, he accepted the position of Director of Research of the Canadian International Paper Company, Hawkesbury, Ontario, Canada, which position he leaves to assume his new duties at the Institute.

Dr. Heuser is well-known as the author of "Lehrbuch der Cellulose-Chemie," of which three editions have been published in German (1921, 1923, 1927); the second edition was translated into English by Clarence J. West (now Editor at The Institute of Paper Chemistry) and G. J. Esselen, Jr., and was also translated into Russian. He is also co-editor (with E. Opfermann(of "Technik und Praxis der Papierfabrikation" (Manufacture of Pulp and Paper), of which six volumes have been published, and which is, without doubt, the outstanding work in this field. He was the founder (and from 1920-1926, the editor) of *Cellulosechemie* which was combined with *Der Papier-Fabrikant* in 1937. He is also the author of a large number of research papers dealing with cellulose, lignin, pentosans, wood, pulp, paper, and rayon, both from the theoretical as well as the practical side; as a result of this work he has taken out a number of patents in Germany dealing, among other subjects, with sizing, the elimination of the red color from sulphite pulp, and the preparation of aromatic compounds from lignin.

From September 1936 to September 1937 Dr. Heuser was Chairman of the Cellulose Division of the American Chemical Society; he has been an honorary member of the German Association of Pulp and Paper Chemists and Engineers since 1926 and is a member of the Canadian and American Pulp and Paper Associations, of the American Chemical Society, the Society of Chemical Industry, the Deutsche Chemische Gesellschaft, and the Deutsche Bunsen-Gesellschaft.

Dilts

- **BANDLESS BEATER ROLLS:**

  Dilts built and designed for hard wear. Will take any "stuff" you care to work—from raw roofing rags to high grade bonds and ledgers.

- **EFFICIENT AND SAFE:**

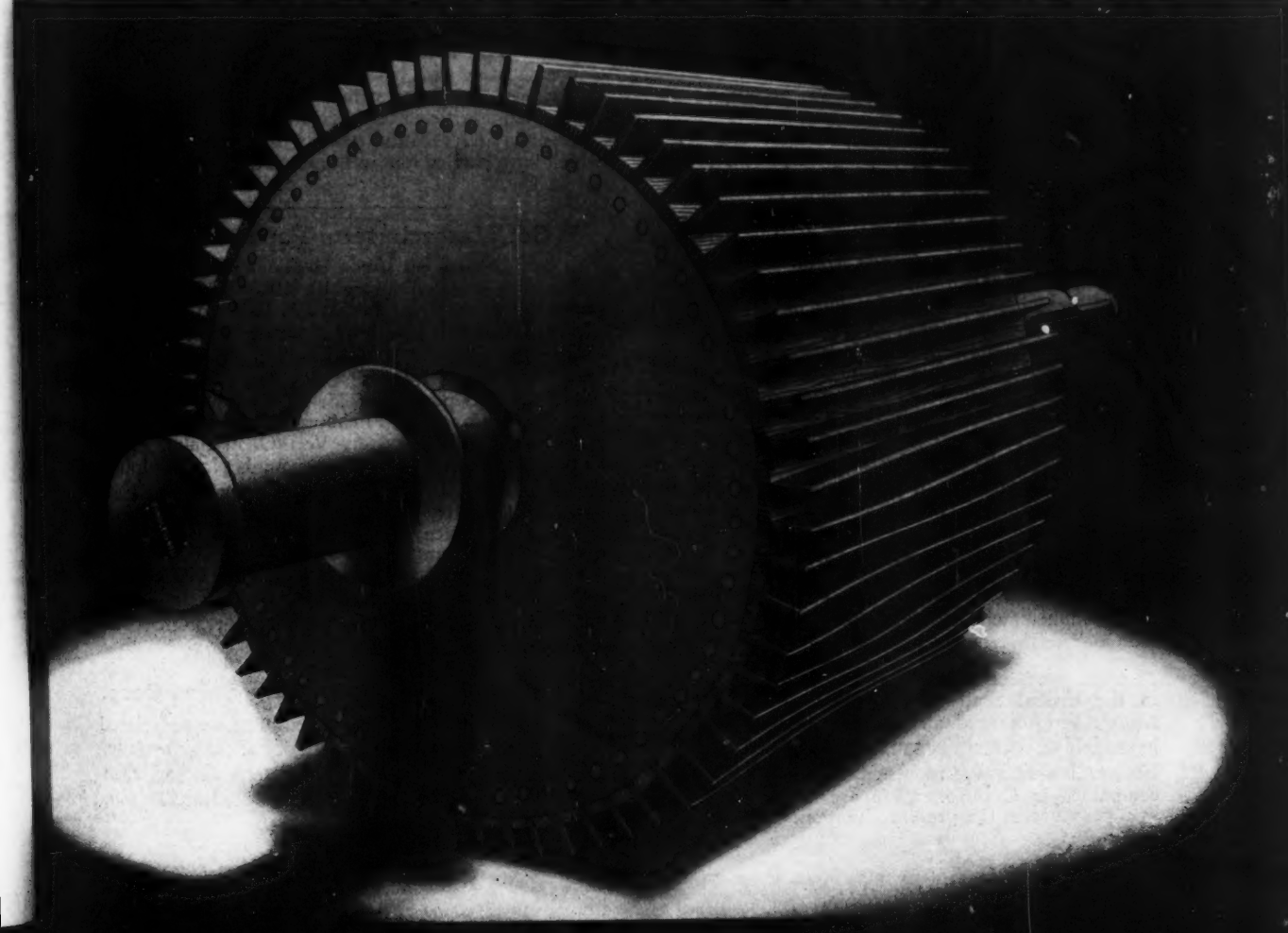
  Continued and safe operation is insured by tapered bars and double tapered locking keys—in addition to the three piece wood filling. Any fly bar can be removed without disturbing others or removing roll from tub. No skilled labor required.

- **YOUR PRESENT BEATERS:**

  May be modernized by rebuilding. Using your old spindle, we can build this Bandless Beater Roll for your safety and plant economy.

Our able engineering staff will gladly consult with you on your individual requirements without obligation to you. Write for details.

DILTS MACHINE WORKS INC., Fulton, N. Y.



THUNDER BAY A HIGH PRODUCER LAST YEAR

(Continued from page 13)

office in 1920 in Port Arthur with Malcolm Cochran as branch manager and John Boswell as assistant manager. For the past fifteen years the average expenditures of the Hammermill Company in the district have been between $600,000 and $700,000 a year in the purchase, transportation and storage of wood and maintenance of branch office and supervising staff. Hammermill operations in the district have differed from those of the majority of Canadian companies, in that they do not operate in the woods themselves, but purchase their wood from farmers, jobbers and settlers, taking delivery by rail, water or truck at their storage pond on the Port Arthur front. The storage pond, adjacent to the Government elevator, has been dredged and equipped to meet the needs of the company, and will hold 25,000 cords of wood.

Until recently, practically all wood purchased was sap-peeled spruce, but for the past few years purchases have been made of poplar. All wood bought by the Port Arthur branch is shipped in Canadian bottoms to Erie, Penn., to be manufactured into high grade writing papers in the company's plant there. The permanent staff directly employed by the Hammermill Paper Co. in Port Arthur varies with the season, ten persons being engaged in office work and supervision, while fifty men are employed during the summer and 25 during the winter at the storage pond and in other operations. Also under the supervision of the Port Arthur office is the Grand Marias, Minn., branch of the company.

Thunder Bay Mill Output Curtailed

A curtailment of production, as compared with the high of the past fifteen months, will go into effect early in January at the Thunder Bay plant of the Abitibi Power & Paper Co., it was stated by R. J. Askin at Port Arthur. Mr. Askin said it was the desire of the company to maintain its employment schedule and for that reason any layoffs would be only among the employees taken on temporarily. The layoff period, he said, was indefinite, but until business in the newsprint market improved there was little likelihood of the Thunder Bay plant going into full operation for the balance of the winter at least. Mr. Askin added that business depression in the United States, which, after all, effects Canadian business, and the fact that there is considerable newsprint in storage now in the United States and Canada, made the partial curtailment of production in the Thunder Bay mill necessary. During the past fifteen months the mill operated at over 100 per cent capacity.

News Situation Serious

Premier Hepburn announced this week that he would immediately arrange another conference with the Quebec Government to consider the "serious print situation" with which the two provinces are now confronted as a direct result of the recession of business in the United States. The Prime Minister's announcement followed an all-afternoon parley which he and Hon. Peter Heenan, Minister of Lands and Forests, had had with representatives of all the paper companies in Ontario. "We are vitally concerned as a province in the present situation," he said, "because most of the companies operate on Crown Lands, and we are practically partners with them. We want the mills to keep open, and we want to provide gainful employment for men as a result of their operation. This business recession in the States came like a bolt from the blue. There must be another conference with Quebec to deal with the question."

It was unofficially rumored that the Queen Park parley considered the feasibility of curtailing newsprint production by 30 per cent in order to meet the reportedly serious situation in which the Ontario mills find themselves. Mr. Hepburn, however, discounted this rumor. In any event such a limitation of production would be strongly opposed, it is understood, by at least one important plant.

R. S. Kellogg Elected Commodore

Royal S. Kellogg, secretary of the Newsprint Service Bureau, and for years one of the best known figures in the forestry and forest products trade association fields, has been unanimously elected commodore of the Harlem Yacht Club, of City Island, New York, one of the oldest and best known yacht clubs in the metropolitan district. The club which has honored him boasts a fleet of over 100 boats, power and sail, and a membership of 180 which was unaffected by the depression years just past.

Mr. Kellogg himself is the owner of Roon II, a 38-foot auxiliary ketch, on which he serves as skipper and navigator, with his wife as mate and crew.

Mr. Kellogg's interest in yachting has been shown by magazine articles on navigation, and his summer week-ends and vacation periods are spent on cruises which have carried him well up and down the Atlantic Coast.

Get Massachusetts Paper Orders

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 10, 1938.—Bids on proposals for paper from January 1, 1938, to December 31, 1938, Commonwealth of Massachusetts, Commission on Administration and Finance, Purchasing Bureau, awarded as follows:

For 270,000 pounds of M. F. book paper, Fitchburg Paper Company, Fitchburg, Mass. (5 bidders); 20,000 pounds rag ledger, Von Olker-Snell Paper Company (5 bidders); 100,000 pounds No. 1 sulphite ledger, Tileston & Hollingsworth Company (on Eatonian Ledger) (8 bidders); 200.000 pounds 25 per cent rag bond, Rutter & McNaught, Inc., (10 bidders); 90,000 pounds No. 4 sulphite bond, Tileston & Hollingsworth Company (8 bidders); 30,000 pounds cover paper, John Carter & Co., Inc., (7 bidders); 9500 pounds No. 2 chemical manila, Storrs & Bement Company, (6 bidders).

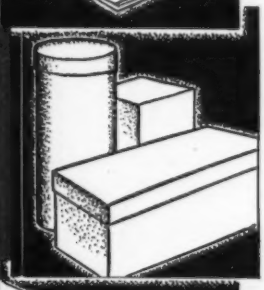
Fannon and Reed with Pulp Sales Corp.

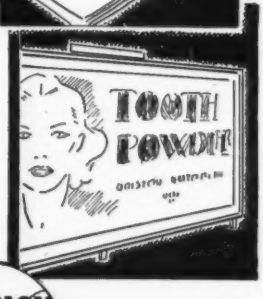
R. W. Fannon and R. R. Reed are now associated with the Pulp Sales Corporation of 230 Park avenue, New York. Mr. Pannon's headquarters will be Green Bay, Wis., and Mr. Reed will be located at Dayton, Ohio.

OPACITY · WHITENESS · BRIGHTNESS

From Baby Bonds to Billboards...

BETTER PAPER with LESS FILLER





TITANOX-A and Titanox-B-30 answer the paper-maker's demand for better, more economical fillers. Whether they are used in bond or book stocks, tissues, utility stock or in any other, they definitely improve the qualities of opacity, whiteness and brightness of the paper with minimum loading.

These modern pigments give to paper a degree of whiteness and brightness never before obtained and mask any discoloration. They are chemically inert, have extremely fine particle size and will not react with any other constituent of paper. Because of their inertness, after-yellowing is minimized. When applied as a beater addition, they are well retained and are adaptable to various surface treatments and coating processes.

Titanox pigments are the modern filler for modern paper. Are you using them?

TITANOX-A is pure titanium dioxide, which is the most opaque and whitest white pigment obtainable. It represents the greatest hiding power available in opaque white pigments. It is particularly recommended for stocks in which opacity, whiteness and brightness must be produced with a minimum of pigment.

TITANOX-B-30 (Titanium Barium Pigment) is titanium dioxide combined with an inert base. It gives exceptional opacity, whiteness and brightness at lower cost, and is especially applicable to all types of paper in which higher pigmentation is permissible.

TITANIUM PIGMENT CORPORATION

Sole Sales Agent

111 Broadway, New York, N. Y.; Carondelet Station, St. Louis, Missouri; National Lead Company (Pacific Coast Branch) 2240 24th Street, San Francisco, California

Our Service Department will be glad to consult with you on the technical details involved in the use of Titanox pigments.

TITANOX

TRADE MARK

Fulton Drying System at Fernandina

The new machine of the Kraft Corporation at Fernandina, Fla., has been equipped with the new Type "S" Fulton Dryer Drainage System, manufactured by the Midwest-Fulton Machine Company, Dayton, Ohio. This system is required for evacuating the condensate and air from the drier section.

While the parent organization, the Container Corporation of America, has in past years equipped all of its paper machines with Fulton Systems, there were certain operating conditions to be considered with respect to the Fernandina machine, that required special treatment.

The drier section of this latest type Beloit machine consists of seventy driers 48-inch diameter by 138-inch face, arranged in six vertical groups of ten each, and two groups of six and four cylinders respectively at the dry end.

As there is no basement under the drier section, it was necessary to locate the Fulton apparatus and pumping equipment in a small pit adjacent to the machine near the wet end. This permitted a very simple and comparatively economical arrangement of both the steam supply and condensate return headers along the machine room floor.

This particular machine is equipped with two pre-driers installed just ahead of the last press, for the purpose of heating up the sheet to obtain maximum water extraction before entering the drier section.

The two pre-driers and certain groups of driers on the wet end section are provided with the new Midwest Visi-flo units, thus giving a constant indication of the flow of condensate from each drier.

Special provision has been made to obtain a gradual drying temperature curve on the wet end driers. This wet end temperature control can be altered at will, while the machine is running, so that maximum production will be possible without danger of applying too much heat to cause "case-hardening" of the surface of the pulp sheet.

An interesting feature of the installation is a unique application of an automatic electrical pressure controller of the Brooke type which actuates the steam admission valve to the paper machine. While the valve is located on the back side, and a considerable distance away from the control equipment, the hook-up is successfully accomplished by means of light steel tubing and levers.

This Fulton System has been designed to operate under the widest possible range of steam pressures, so that if desired at any time in the future, any weight or grade of paper, or pulp may be dried correctly and uniformly.

Albany Paper Mill Sold

Real estate, buildings and machinery of the Bahr Refiners Paper Corporation of Albany, Ind., was transferred to the Morris Paper Mills of Chicago for $49,990 by a quit-claim deed filed in the county recorder's office Tuesday afternoon according to the *Press* of Muncie, Ind. The deed carried $50 worth of documentary tax stamps.

The deed to the paper mill was dated last September 8 but had not been recorded.

It was set out in the deed that the transfer was pursuant to a contract of lease and option to purchase, executed between the Albany corporation and Walter R. Butler and A. E. Bentham, July 25, 1932. Messrs. Butler and Bentham assigned the option to the Morris Paper Mills.

Samuel Ashby Lewis Becomes President

BELLOWS FALLS, Vt., January 10, 1938.—Effective several months ago, Samuel Ashby Lewis and Noel Day Sidford, Jr., purchased the Robertson Paper Company from the estate of the late John E. Babbitt. Mr. Babbitt built up this highly successful concern during the infancy of the waxed paper industry. Starting in 1892 it was one of the first four concerns in the business.

Noel Day Sidford, Jr. is a young man of English descent educated at Colgate University and the Harvard University School of Business Administration. His activities are being centered in the greater New York area, with sales office at 17 Battery Place, New York City.

Mr. Lewis comes from an old Virginia family, was educated at the University of Virginia and the Harvard University Graduate School of Business Administration. He has spent the past twelve years in minor and major executive capacities with outstanding concerns in New England and New York City, a large part of the time with a leading paper converter where he served in various capacities and finally as Factory Manager. He is highly qualified to handle the problems of a converting mill, which is looking toward improvements in its quality and a more complete diversification of its lines, especially in line with present day trends.

Ray C. Sheldon, who is well known to the waxed paper trade, has been retained in the same capacities as under the Babbitt management. No changes are being made in the personnel of the plant, or in the policies of the old company.

To Hold Hearing March 14

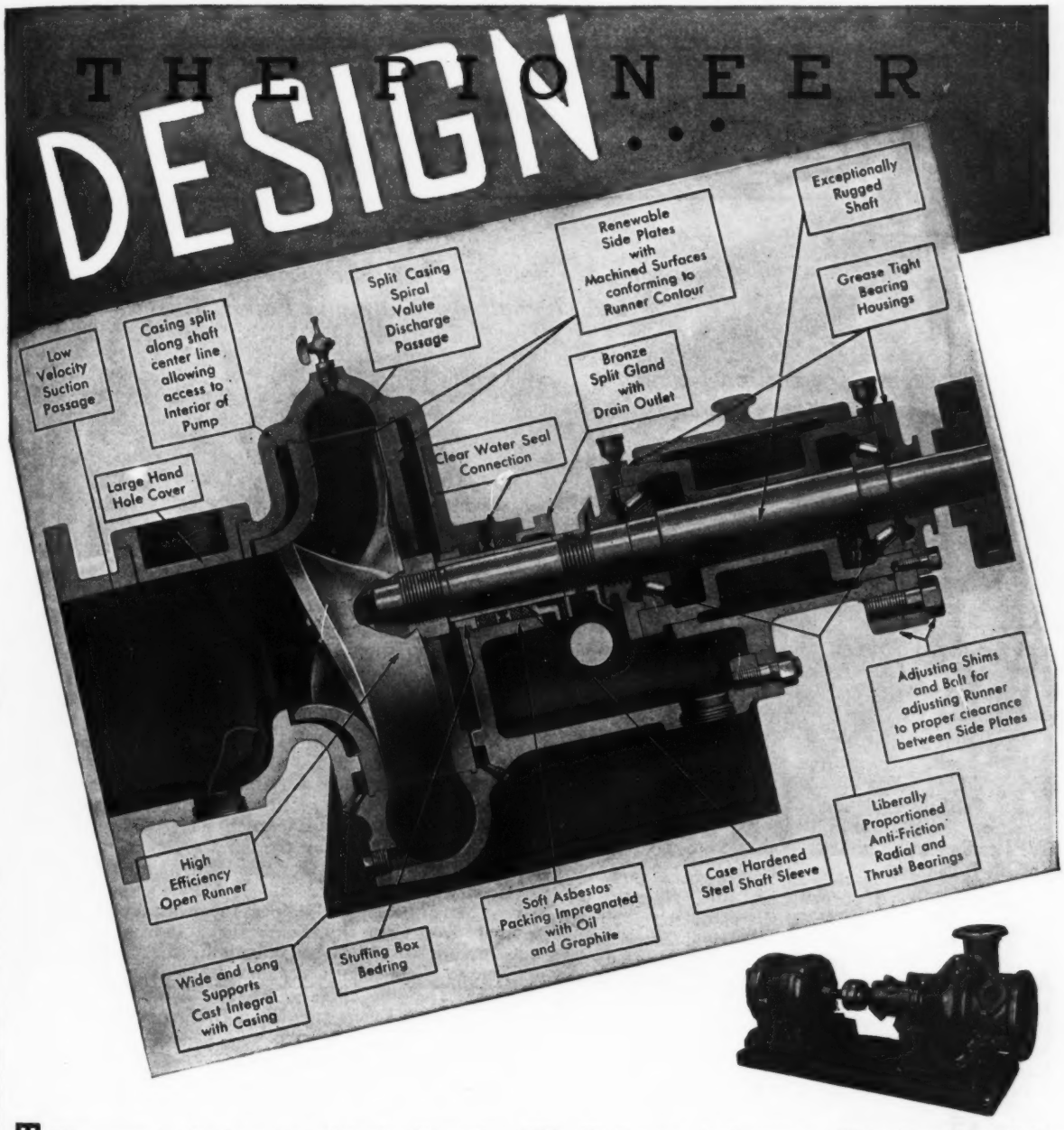
WASHINGTON, D. C., January 12, 1938.—Hearing will be held here on March 14, it was announced last week, in connection with the trade agreement with the government of the United Kingdom. February 19 will be the closing date on which applications will be received to be heard.

Included in the list of products on which the United States will consider granting concessions to the United Kingdom are: sheathing paper, roofing paper, etc.; stereotype and carbon paper, etc.; India and bible paper; simplex decalcomania not printed; unsensitized basic paper; all boxed paper; drawing paper; hanging paper; filtering paper; unmounted stencil paper; and blank books, etc.

As is well known there have been a good many conversations back and forth with the British over this proposed agreement, but it will still be some time before the agreement can be finally consummated. As stated above it will be March 14 before the committee for reciprocity information hears American manufacturers and it will then still be some time before all of the information can be tabulated into usuable form. Government officials are looking forward to completing this agreement because it is considered the most important of any agreement which has been undertaken since the inauguration of the trade program.

Paper Concerns Elect Officers

The following officers were elected December 30, 1937 for both the American Wood Board Company, of Schuylerville, and the Blandy Paper Company, of Greenwich, New York:—Graham Blandy 2nd, president; D. E. Blandy, vice president and Elmer Sherman, secretary and treasurer.


THE PIONEER DESIGN . . .
Exceptionally Rugged Shaft
Renewable Side Plates with Machined Surfaces conforming to Runner Contour
Split Casing Spiral Valute Discharge Passage
Grease Tight Bearing Housings
Low Velocity Suction Passage
Casing split along shaft center line allowing access to Interior of Pump
Bronze Split Gland with Drain Outlet
Clear Water Seal Connection
Large Hand Hole Cover
Adjusting Shims and Bolt for adjusting Runner to proper clearance between Side Plates
Liberally Proportioned Anti-Friction Radial and Thrust Bearings
High Efficiency Open Runner
Case Hardened Steel Shaft Sleeve
Soft Asbestos Packing Impregnated with Oil and Graphite
Stuffing Box Bedring
Wide and Long Supports Cast Integral with Casing

THIS pump is the latest model of split casing Allis-Chalmers stock pump. Introduced in all its essential noteworthy characteristics over 10 years ago, it was the pioneer design for most makes of present day high efficiency stock pumps. The distinction of making this important development in the more economical handling of paper stock belongs to Allis-Chalmers and it is reasonable to expect that the originator of an outstanding design will be able to furnish pumps which will prove of the greatest value in your mill.

We are sure that Allis-Chalmers stock pumps would save money in your plant as they have in many others. It will pay you to write for a copy of Bulletin 1643-B which not only describes this improved stock pump but also contains pipe friction tables and other engineering information.

833

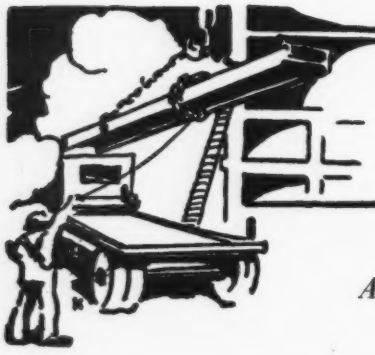
A-C ENGINEERED

Blowers, Compressors, Vacuum Pumps.
Cement Making Machinery, Rock Crushers, Screens, Roadbuilding Equipment.
Centrifugal Pumps.
Electric Generators, Transformers, Converters, Rectifiers, Switchgear and Regulators.
Electric Motors for all purposes.
Farm Machinery, Road Machinery, Farm and Industrial Tractors.

ALLIS-CHALMERS

A-C ENGINEERED

Flour, Feed and Flaking Mill Machinery.
Hydraulic Turbines and Accessories.
Mining, Metallurgical and Hoisting Equipment.
Sawmill and Timber Preserving Machinery.
Steam Turbines, Steam Engines and Condensers.
Texrope Drives.
Water Wheels and Accessories.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Financing and Operation of Pulp and Paper Mills

General Construction News

Corpus Christi, Tex.—The Celotex Corporation, 919 North Michigan avenue, Chicago, Ill., manufacturer of wall board products, insulating board, etc., has concluded negotiations for acquisition of the Gulf Gypsum Company, with extensive gypsum deposits at Falfurias, Brooks County, Texas, vicinity of Corpus Christi, and will consolidate with organization. Purchasing Company is considering plans for construction of a large mill for production of wall board specialties in vicinity of Falfurias, to be operated in conjunction with mill at Marrero, vicinity of New Orleans, La. Plans will consist of several one-story units, equipped for large capacity, and is reported to cost in excess of $500,000, with equipment. Erection is scheduled to be carried out during 1938.

Vancouver, Wash.—The Columbia River Paper Mills, Vancouver, manufacturer of newsprint, wrapping and kindred paper stocks, has taken out a charter under California laws, with capital of $750,000, to operate in that state. The incorporators include F. W. Leadbetter, president, Walter L. Spaulding and Joseph J. Donovan.

Chicago, Ill.—Moore-Boxes, Inc., recently organized with capital of 5000 shares of stock, no par value, to manufacture corrugated and other paper boxes and containers, has leased a portion of ground floor in the industrial building at 1325 Carroll avenue, totaling about 15,000 square feet of floor space, and will equip and occupy for new plant. Operations are scheduled to begin soon. New company is headed by L. T. and W. D. Moore.

New York, N. Y.—The Carroll Envelope Company, recently organized, has leased space in building at 19 West Twenty-first street, and will occupy for plant for manufacture of commercial envelopes and allied paper products.

Green Bay, Wis.—The Fort Howard Paper Company, manufacturer of tissue and crepe papers, is pushing work towards early completion on new one-story addition to mill, previously referred to in these columns, and will have structure ready for occupancy in about 30 days. General erection is being carried out by the Selmar Company, Northern Building, Green Bay, general contractor. No estimate of cost has been announced. Harry W. Williams, Northern Building, is architect.

Enka, N. C.—The American Enka Corporation, Enka, near Asheville, N. C., manufacturer of viscose rayon products, has plans for new addition to mill, to be one-story, used for expansion in chemical unit at plant. It is reported to cost over $60,000, with equipment. Bids have been asked on general erection contract and work is scheduled to begin at early date. Main offices of company are at 271 Church street, New York, N. Y. A. J. L. Moritz is technical manager.

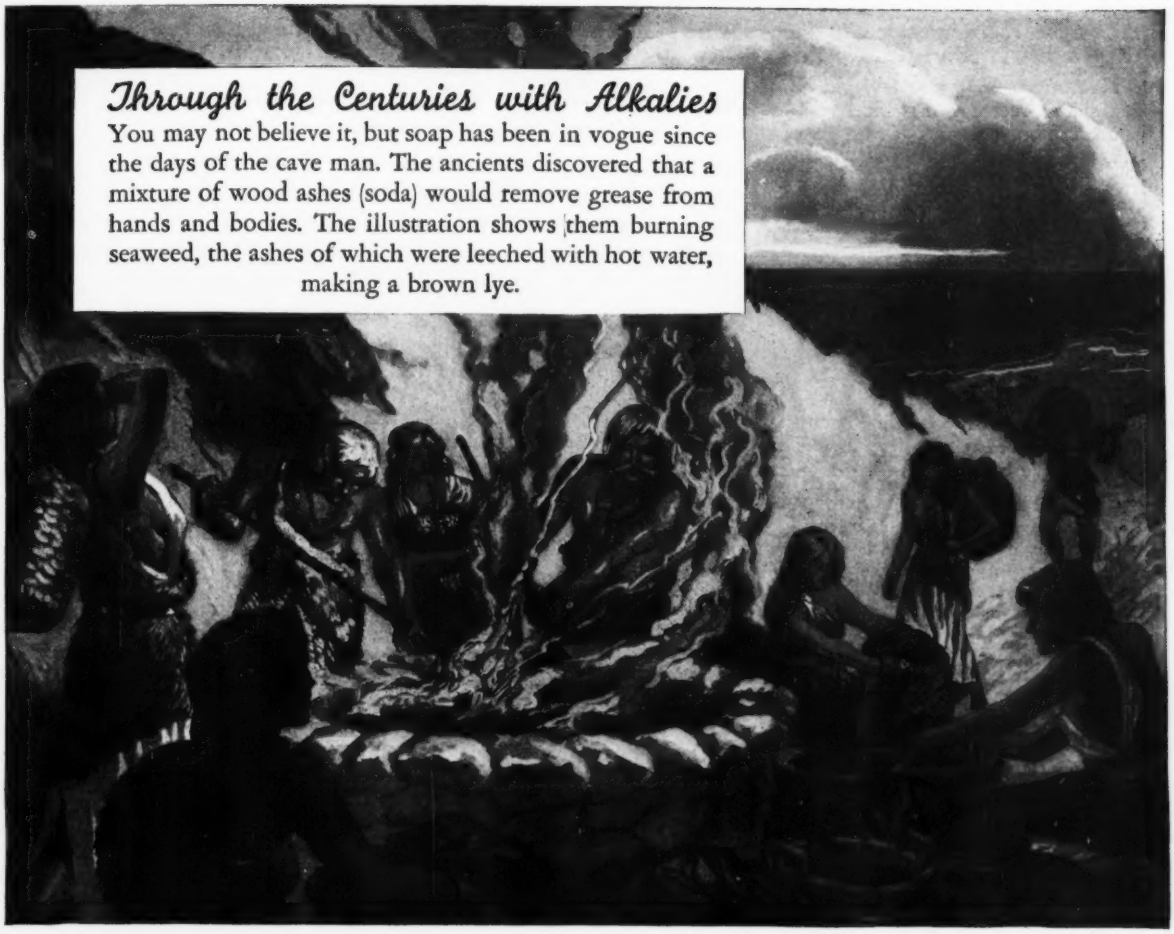
Minneapolis, Minn.—The Ruberoid Company, 500 Fifth avenue, New York, N. Y., manufacturer of roofing products, has taken over industrial property at 50 Lowry avenue, Minneapolis, and will occupy at once for new factory branch, storage and distributing plant for the North Central and Northwestern States area. Local headquarters will be established at same location, removing from 155 Twenty-sixth avenue, S. E.

Valparaiso, Ind.—The Continental-Diamond Fibre Company, manufacturer of insulating paper products, fiber specialties, etc., operating at former mill of Fibroc Insulation Company, South Campbell street, has work under way on one-story addition to steam power house, recently referred to in these columns incorrectly at Elkhart, Ind. General erection is being carried out by the Smith-Nuppanau Company, Elkhart; setting for new boiler unit to be installed will be built by Williams & Patch, Gary, Ind., while structural steel will be furnished by the Edwards Iron Company, South Bend, Ind. A 125-foot radial brick stack is being built by the Continental Chimney Company, Chicago, Ill. Entire project is reported to cost close to $40,000, with equipment. Main offices of company are at Bridgeport, Pa.

Georgetown, S. C.—The Southern Kraft Corporation, 220 East 42nd street, New York, N. Y., plans early construction of a marine railway line at new mill at Georgetown, to extend about 1800 feet along the Sampit River from the plant. Company has made application for Federal permission, including dredging of stream for a new slip.

Wilmington, N. C.—The Riegel Paper Corporation, 342 Madison avenue, New York, N. Y., manufacturer of waxed glassine and other processed paper stocks, will defer the erection of its proposed new pulp mill at site secured a few months ago at Southport, near Wilmington, and project will now mature at a later date. Plant was originally scheduled for completion late in 1938. It will comprise a number of units, as previously announced in these columns, to be equipped for a capacity of about 125 tons of processed pulp per day. John L. Riegel is president and general manager.

New Brunswick, N. J.—The Revolite Corporation, 500 George street, manufacturer of gummed paper tape and kindred specialties, has arranged for



Through the Centuries with Alkalies

You may not believe it, but soap has been in vogue since the days of the cave man. The ancients discovered that a mixture of wood ashes (soda) would remove grease from hands and bodies. The illustration shows them burning seaweed, the ashes of which were leeched with hot water, making a brown lye.

Users of COLUMBIA Soda Ash, Caustic Soda, and other products know that here are man-made products which are the finest obtainable. To others, may we suggest that you lose no time in discovering for yourself the extreme uniformity, . . . the freedom from variability . . . and from impurities . . . that characterizes all COLUMBIA ALKALI CORPORATION products. And COLUMBIA Service has been found just as dependable as the alkalies which bear its name.

SODA ASH
CAUSTIC SODA
SODIUM BICARBONATE
MODIFIED SODAS
LIQUID CHLORINE
CALCIUM CHLORIDE

COLUMBIA

THE COLUMBIA ALKALI CORPORATION

BARBERTON • OHIO

NEW YORK CHICAGO BOSTON PITTSBURGH
CLEVELAND CINCINNATI ST. LOUIS MINNEAPOLIS

change of company name to the Industrial Tape Corporation, effective January 1.

Nottoden, Norway—A. S. Kunstilkefabrikken, Nottoden, recently organized with capital of about $500,000, has completed erection of first unit of new mill for the production of staple fiber for rayon manufacture, and will operate on initial basis of about 300 tons per annum. It is expected to increase plant facilities for increased output at a later date.

Workington, England—A company whose name is temporarily withheld is closing negotiations for the purchase of a tract of land on the River Derwent, Workington, Cumberland, as site for a new pulp and paper mill, to specialize in the production of transparent and other high-grade paper stocks. New mill will consist of a large group of units, estimated to cost in excess of $2,000,000 with machinery. It is proposed to begin work on project in the near future and to have the mill ready for operation in 1939.

Ehingen, Germany—Schwabische Zellstoff, A. G., Ehingen-on-Danube, recently organized, plans early establishment of a new local wood pulp mill, utilizing Swabian beechwood for raw material. Plant will consist of several units and is reported to cost over $300,000, with equipment.

Padalarang, Java, Netherlands East Indies — N. V. Papierfabrik Padalarang, Padalarang, Java, operating a local pulp and paper mill for the production of wrapping paper, has plans under way for the construction of a new mill at Surabaya, where site is being selected. It will comprise a group of one-story units, equipped for an initial capacity of close to 4000 metric tons per annum, reported to cost over $1,500,000, with equipment. Work is scheduled to begin in near future.

Tokyo, Japan—The Mitsubishi Paper Manufacturing Company and Hokuyetsu Paper Manufacturing Company, both of Tokyo, and other local interests are forming a new company with capital of 100,000,000 yen (about $29,000,000), to construct and operate a new mill at Hokkaido Perfecture for the production of rayon pulp. It will consist of several large units, with power house, pumping station and other mechanical departments, reported to cost in excess of $2,000,000 with equipment. Needle-leaf trees abounding in the area noted will be used for raw material supply. It is proposed to begin work on project at early date. Toyo Spinning Company, Nippon Rayon Company and Kanegafuchi Spinning Company, all of Tokyo, will be interested in the new company, and will use a considerable part of mill output.

New Companies

New York, N. Y.—The Community Paper Corporation has been organized with capital of 200 shares of stock, no par value, to deal in paper specialties. New company is represented by Myron J. Kleban, 19 West 44th street, attorney.

Brooklyn, N. Y.—The Sutter Paper and Woolen Mills Supply Corporation has been incorporated with capital of $5,000, to deal in supplies for paper mills. New company is represented by Samuel Wagner, 251 Powell street, Brooklyn, attorney.

Newton, Mass.—The Newton Waste Paper Company, Inc., 17 Institution avenue, has been chartered to deal in waste paper products. Sydney B. Holden, address noted, is president and treasurer.

Obituary

Richard H. Smith

Richard H. Smith, of 264 Cliff avenue, Pelham Heights, N. Y., a paper manufacturer, died December 28, in Mount Vernon Hospital, after a short illness. He was 54.

Born in New York City on October 6, 1883, he was a son of the late Thomas R. H. and Katherine Smith. He married the former Mary V. Keleher, of Tarrytown, and had been a resident of Pelham for the past 28 years.

At the time of his death, Mr. Smith was president of the Basin Mills Pulp Company, Orono, Me., which he founded several months ago. He had been in the paper business since 1907.

Mr. Smith was a member of the Seventh Regiment in New York City and served during the World War. His brother, the late Robert H. Smith, was killed in action.

Besides his widow, he is survived by three sons.

Funeral services were held at 2:30 p. m. December 31 in the Ferncliff Mausoleum followed by interment.

Joseph J. Hartstern

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 10, 1938.—Joseph J. Hartstern, an engineer at the Hoberg Paper Mills, Inc., Green Bay, Wis., was killed last week while cleaning a packing on a paper machine after the mill had been shut down. It is believed accumulated steam caused the flywheel to start when he touched it, dragging his body between the belt and a heavy pulley. He was dead on arrival at a hospital.

Dixie-Vortex Opens Plant in South

A factory has been opened in Darlington, S. C., by the Dixie-Vortex Company, manufacturers of paper drinking cups and containers, according to an announcement recently made by A. R. Flowers, secretary of the Darlington Chamber of Commerce. The company has secured a modern factory building and took possession January 1. Machinery, now under construction, will be installed.

The new factory is one of two being opened at this time to provide for expansion. An announcement was made about two months ago of another at Los Angeles, Cal. The company already has plants at Chicago, Ill.; Easton, Pa.; and Toronto, Ont.

The company is the world's largest manufacturer of paper drinking cups.

The new plant will serve the trade in the Southeastern states. Officials of the company state that Darlington was selected because of its excellent geographical position and South Carolina because of its favorable tax laws and attitude towards industry.

New "Perfection" Gummed Papers

With the slogan, "All that the Name Implies," the Gummed Paper Division of the Paper Manufacturers Company, Inc., Philadelphia, announces a new line of "Perfection" gummed plated papers available to fine paper merchants and printers.

The colors are the most popular shades in demand, thus assuring good results in stock turnover. Because of their high quality and uniform surface, printing on these papers is exceptionally good.

Hold Calender Review in Boston

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 10, 1938—With an attendance of approximately 550, the Tileston & Hollingsworth Calender Review was presented in a highly interesting manner under the auspices of the Boston Club of Printing House Craftsmen in John Hancock Hall Friday evening, with George Welp, art director for the International Printing Ink Corporation as the critic. Philip J. McAteer, president of the New England Electrotype Company and president of the Boston Club of Printing House Craftsmen, presided.

A. V. Howland, assistant treasurer of Tileston & Hollingsworth Company and promulgator of the Calendar, introduced Mr. Welp. Six of the sheets of the Calender were noted as satisfactory and six are unsatisfactory. The critic expressed the opinion that, on the whole, the Calender was a very capable job, saying that it would be interesting to see how a similar job in another part of the country would size up.

The meeting was attended by printing and advertising executives of Boston and vicinity and by art and printing students from various schools in Boston.

The paper used in making the Calender sheets was manufactured by the Tileston and Hollingsworth Company at their mill in the Hyde Park District, Boston.

Another Tileston & Hollingsworth Calender Review was held at the Columbian Hotel, Portland, Me., Thursday evening, January 6, with an attendance of 57, including many from Camden, Bath and Augusta, Me. Mr. Welp, who was introduced by Mr. Howland, analyzed the Calender.

Other T. and H. Calender meetings are to be held. The next one is to be at Springfield, Mass., January 27, under the auspices of the Springfield Advertising Club.

Paper Concerns Pay Bonuses

[FROM OUR REGULAR CORRESPONDENT]

EAST WALPOLE, Mass., January 10, 1938.—Hollingsworth & Vose Company and Bird & Son, Inc., have made announcements of bonuses to their employees. Flat sums depending on the length of service were given by Hollingsworth & Vose Company to employees at both East Walpole and West Groton mills. Bird & Son, Inc., in a statement signed by President Benjamin Robert, say that while business has been considerably curtailed and the added compensation could not be paid at this time, the service compensation or bonus will be distributed on the same basis as last June, which is 4 per cent of six months' earnings to employees who have been with the company over a five year period and 2 per cent to those who have served two to five years.

Tile Conduit

A revised, two color, 8 page Bulletin No. 35-67A on ADSCO-Bannon Tile Conduit and ADSCO-Corning Filler Insulation for underground steam or hot water lines, including illustrations of the products, details of construction and their applications, is available by addressing the American District Steam Company, North Tonawanda, N. Y.

General Electric Orders Decrease

SCHENECTADY, January 10, 1938.—Orders received by General Electric Company in the fourth quarter of 1937 amounted to $73,997,063, compared with $84,857,181 in the same period of 1936, a decrease of almost 13 per cent, President Gerard Swope announced today. For nine months, as already reported, the total was $305,276,556, compared with $211,891,038 for nine months of 1936, an increase of 44 per cent making total orders for the year $379,273,619, compared with $296,748,219 last year, an increase of 28 per cent. Sales billed and earnings for the year 1937 are not yet available, but will be given in the annual report to be issued in the latter part of March.

Mr. Swope stated that in every major department of the Company, orders were greater in 1937 than in 1936. In this connection, he pointed out that the total number of employees was greater than a year ago, notwithstanding the reduction in the last few months, and that wages are still at the highest point in the history of the company. He also stated that in spite of the increased cost of labor and material, improvements in design and better manufacturing methods had enabled the company to maintain the trend towards lower costs so that reasonable selling prices might stimulate an increased demand.

German Pulp Output Higher

Output of wood pulp by German mills up to the end of October averaged nearly 40 per cent higher than during the corresponding period in 1936. The increase in tonnage amounting close to 592,000 metric tons was evenly divided between mechanical and chemical pulp. Owing to the greater volume in output of the latter class, however, the percentage of increase was considerably higher for mechanical pulp.

German import figures as appearing in the official trade statistics do not make any distinction between sulphite and sulphate pulp. Imports of chemical pulp during the first ten months of 1937 reached a volume of 147,632 metric tons as against 132,635 tons for the same period last year. Exports for the same periods dropped from 200,651 tons to 145,076 tons. German foreign trade in mechanical pulp is relatively insignificant.

Finch, Pruyn Raise Wages

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., January 10, 1938—Announcement is made here of the granting of a wage increase to all employees of Finch, Pruyn & Co., which was placed in effect last week. The increase affects hourly wages mainly, laborers receiving a raise from 51 to 54 cents an hour while other classifications of employees who have been receiving up to $1.34 an hour are increased two cents hourly. It is understood the increase is the result of the raise in the price of newsprint paper from $42.50 to $48 for the first part of the year and to $50 during the last half. Employees of the company received an increase last summer following announcement of a pending increase in the production of newsprint. The concern employs a large force in its pulp and paper division here and indications are that a good year will again be experienced.

PAPER TRADE JOURNAL

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COMING EVENTS IN THE PAPER INDUSTRY

AMERICAN PAPER AND PULP ASSOCIATION, Sixty-first Annual Convention and meeting, Waldorf-Astoria Hotel, New York. February 21-25.

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Convention, Waldorf-Astoria Hotel, New York, February 21-24. Annual Luncheon, Waldorf-Astoria Hotel, Wednesday, February 23.

SALESMEN'S ASSOCIATION OF THE PAPER INDUSTRY, Annual Meeting and Luncheon, Waldorf-Astoria Hotel, New York, Tuesday, February 22.

NEW YORK ASSOCIATION OF DEALERS IN PAPER MILLS' SUPPLIES. Annual Banquet, Hotel Commodore, New York, February 23.

NATIONAL PAPER TRADE ASSOCIATION OF THE UNITED STATES, Convention, Waldorf-Astoria Hotel. New York. February 21-23.

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry— Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park,American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILLS SUPERINTENDENTS ASSOCIATION, Annual meeting, Royal York Hotel, Toronto, Ont., June 22-24.

CANADIAN PULP AND PAPER ASSOCIATION. Annual meeting. Windsor Hotel, Montreal, Que. January 26-28.

SPENDING OUR WAY TO PROSPERITY

Alibis rarely carry conviction and the immoderate language and the inclusion of incoherence in the speeches of Secretary of the Interior, Harold Ickes, and Assistant Attorney General, Robert H. Jackson, are such stuff as to recall the "good old days" of the campaign year, the days of 1932. Such diatribes must, in the absence of any supporting factual information, be considered as wild accusation and invectives cast in the heat of intemperate thinking, at the foes of democratic prosperity—the visionary sixty families who hypothetically control the well being of so extensive and highly developed an industrial nation as ours.

Speeches of this kind are negative and sterile of any constructive result. When reason takes a holiday under the sponsorship of politically prominent men, the fears instilled by incompetency in the minds of those men who create employment for millions of our workers, can only be intensified. The sum total of this vituperation is a wedge that must cleave apart the President's expressed desire for the cooperation of industry with the Government to stay the current business recession and to restore prosperity, through employment, to the nation.

But the New Deal must, of necessity, stand on its record of accomplishment. If it fails to provide that which it sought to achieve no alibis or "buck passing" can redeem ill advised legislation or ineffective Federal regulation and administration from the inglorious failure which must, sooner or later, fall heavily on impractical ideas and methods.

There is good reason for thinking that the idea of spending our way to prosperity is not only new but that it closely approaches what has formerly been associated with improvidence. The discard of thrift is not a good manner to provide abundance. Promises are excellent but performance is more satisfying, and in the record established by this Administration deficits rise to impressive heights to spread red ink copiously on the pages of the nation's ledger.

Now, the severe decline in industry and trade has reached such large proportions that it threatens the democratic form of our Government. It seems futile to continue to launch new experiments in the mere hope that by doing something, something of real value will be done. Objectives are not likely to be attained by loose thinking and hasty action. Reason and practical handling of vital problems are far more certain to produce results. The cooperation of business men can be obtained but not by the method of denunciation. We earnestly hope that the Administration will free itself of this mob complex, stop throwing bricks, discontinue the Don Quixote method of tilting at fanciful foes and get back to fundamentals, — to those elementary verities which can be thoroughly considered in all their aspects, rather than to attempt to bulldoze industry and trade into a doubtful method of procedure.

One of the alarming factors in the condition of the country's financial position is the repeated assertions of the President to effect a balance of the budget. We all share his hope but even hope must have something real to feed upon. The theoretical economy now in effect merely revises over-estimates in revenue and continually adds more expenditures to increase the difficulty of making the two ends meet.

The report of the Treasury's activities for the fiscal year ended June 30, 1937, when improvement in business conditions increased receipts to $1,178,000,000 more than in 1936, was encouraging. But on January 6, comes the disconcerting news that the Federal deficit for the fiscal year 1939, despite plans for a reduction of half a billion dollars, will be one billion dollars in the seven billion dollar budget!

It is futile indeed to talk about security for the people. There can be no security in a seven billion dollar budget. In his message at the opening of the second regular session of the 75th Congress, President Roosevelt said in reference to the budget: "I have hitherto stated that, in my judgment, the expenditures of the National Government cannot be cut much below $7,000,000,000 a year without destroying essential functions of letting people starve. That sum can be raised and will be cheerfully provided by the American people, if we can increase the nation's income to a point well beyond the present level."

But, many millions of Americans would like some definite information how we are to obtain this large income to balance the increasing deficit. Any estimate of the size of the nation's revenue in the future, must be pure conjecture. It depends upon many unknown factors and among them is the success of the cooperation between Government and business.

There is no factual basis for the opinion that future revenue will meet expenses and effect a balance of the budget. There is more reason for believing that the deficit can only be met through increased and heavy taxation. When it is considered that the Government's income has never totaled seven billions, and only once in our history has reached six billions, it is not unreasonable to believe that this optimistic hope is likely to be long deferred. A good approach to the problem would be to decentralize the huge bureaucracy which has been developed in Washington in the past eight years.

Storrs & Bement Show Early Ad

BOSTON, Mass., January 10, 1938.—In a New Year's Greeting to the printing paper and allied trades at the close of their ninetieth year of business, Storrs & Bement Company mention that in going over old books and documents, they came across the first Boston street directory in which Amariah Storrs' name appears. They have reproduced two of the pages of the directory, "printed in 1847 for the year 1848," on one of which, with other names, is "Storrs Amariah, 25 Cornhill (fancy papers)." The other page shown is one of advertisements. Above the greeting is a picture of the exterior of the original office, bearing the name of the proprietor and the sign "Fancy Papers."

George A. Engert in Hospital

Friends of George "Whitey" Engert will be pleased to know he is making satisfactory progress in the Saratoga Hospital, Saratoga Springs, N. Y., following his recent injury.

Mr. Engert is sales representative of Dilts Machine Works, Inc., and was struck by a passing automobile on December 21 while changing a tire on his own car. Mr. Engert received several broken ribs and back injuries which will confine him to the hospital for several weeks, and while his injuries have been painful he is considered out of danger.

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES

Months	1937	1936	1935	1934
January	90.3%(c)	76.1%	65.8%	.....
February	90.1%(c)	77.9%	70.0%	.....
March	90.3%(c)	76.0%	70.5%	.....
April	92.1%(c)	82.3%	70.0%	.....
May	90.6%(c)	81.6%	69.4%	.....
June	87.3%(e)	80.7%	72.3%	.....
July	81.8%(c)	77.3%	64.9%	.....
August	82.9%(c)	81.5%	70.9%	.....
September	78.6%(c)	80.5%	71.9%	58.2%
October	73.5%(c)	87.6%	75.6%	64.7%
November	61.7%(c)	88.0%	75.3%	61.7%
December	54.3%(c)	85.9%	71.2%	59.6%
Year Average	80.8%	81.3%	70.5%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS		CORRESPONDING WEEKS	
*November 27, 1937	57.6%	November 28, 1936	87.9%
*December 4, 1937	60.6%	December 5, 1936	90.3%
*December 11, 1937	55.8%	December 12, 1936	93.3%
*December 18, 1937	59.5%	December 19, 1936	94.4%
*December 25, 1937	(h)48.5%	December 26, 1936	(h)66.5%
*January 1, 1938	44.2%	January 2, 1937	85.1%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks					
Ratio Limits	Nov. 27, 1937	Dec. 4, 1937	Dec. 11, 1937	Dec. 18, 1937	Dec. 25, 1937	Jan. 1, 1938
0% to 50%	189	143	164	151	182	131
51% to 100%	129	175	154	165	126	77
Total Mills Reporting	318	318	318	316	308	208

* Subject to revision until all reports are received.
(c) Basic capacity data have been adjusted to correspond with ratings reported by individual companies.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours," were as follows:

Mos.	1937	1936	1935	1934	Mos.	1937	1936	1935	1934
Jan.	80%(e)	61%	61%	....	July	67%(e)	69%	59%	....
Feb.	86%(e)	67%	67%	....	Aug.	74%(e)	75%	65%	....
Mar.	87%(e)	68%	67%	....	Sept.	70%(e)	76%	69%	62%
Apr.	89%(e)	70%	61%	....	Oct.	66%(e)	82%	76%	63%
May	86%(e)	68%	61%	....	Nov.	56%(e)	79%	70%	56%
June	75%(e)	68%	65%	....	Dec.	....	74%	60%	52%

Week end. Nov. 27, 1937—50%
Week end. Dec. 4, 1937—50%
Week end. Dec. 11, 1937—53%
Week end. Dec. 18, 1937—51%
Week end. Dec. 25, 1937—48%(h)
Week end. Jan. 1, 1938—24%

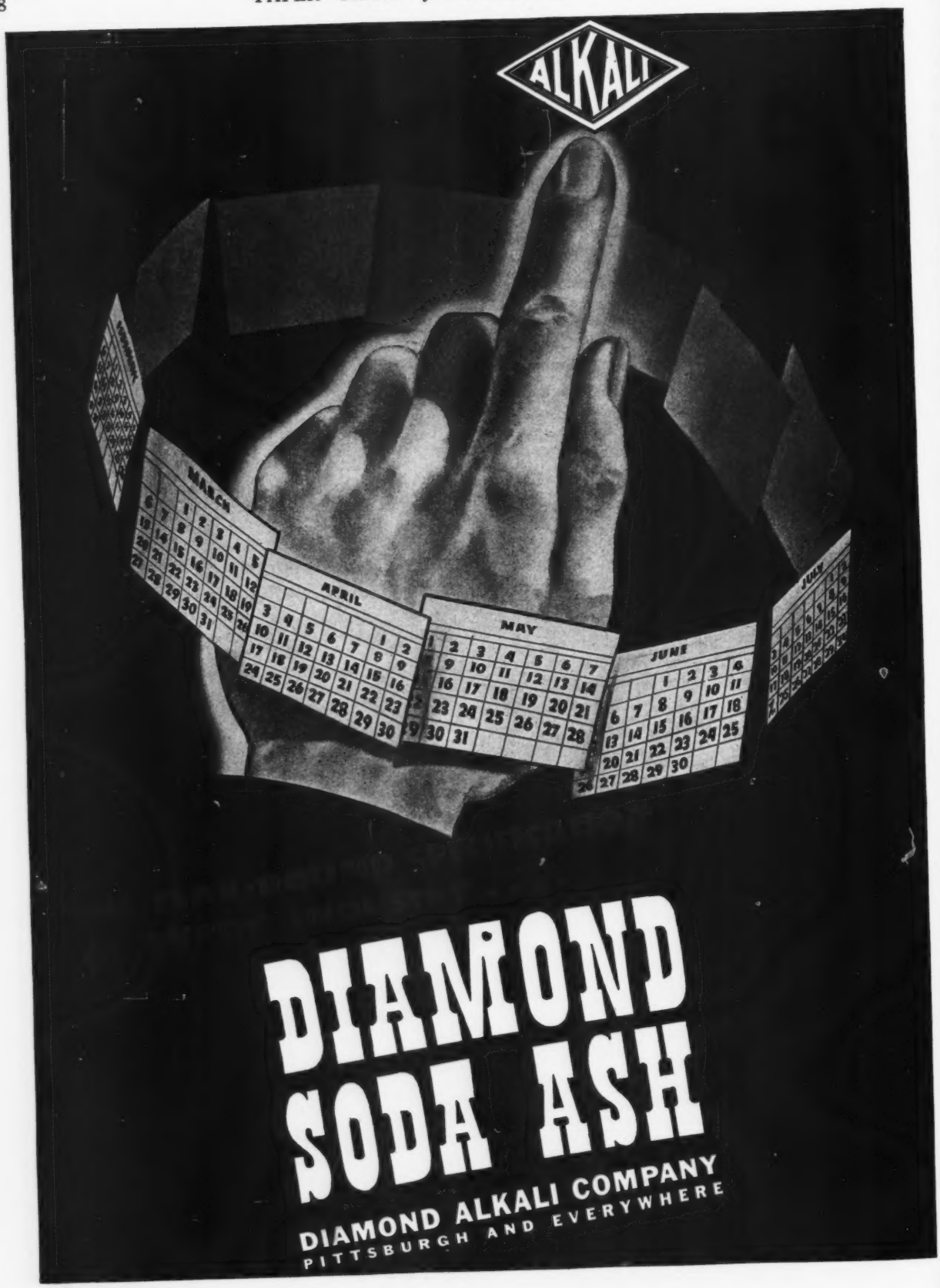
(e) Basic figures revised to include new members of the National Paperboard Assn.
(h) Holiday week; percentages based on six days' operation.

Government to Improve Fox River Dam

APPLETON, Wis., January 10, 1938.—Reconstruction of the upper dam on the Fox River at Appleton, Wis., at a cost of $209,600 during the fiscal year beginning next July 1 is planned by the government. The dam furnished power to the Wisconsin Michigan Power Company, Kimberly-Clark Corporation's Atlas mill, and the Fox River Paper Company. It is reported to be in poor condition, with insufficient flood discharge capacity for the proper regulation of storage in Lake Winnebago. Congress has been asked to appropriate the funds so the work can be done next summer.

Other improvements on the river will include completion of a lock near Kaukauna, Wis., by next May at a cost of $160,000; dredging of a turning basin at Green Bay, Wis., at a cost of $61,500 so large boats of the Great Lakes can negotiate the docks to unload pulp wood, pulp and coal, and $41,900 for dredging at needed points on the river.

Total expenditures on the Fox River for both operation and construction during the current fiscal year are $351,644.64.


ALKALI
MARCH
APRIL
MAY
JUNE
JULY
DIAMOND
SODA ASH
DIAMOND ALKALI COMPANY
PITTSBURGH AND EVERYWHERE

Section of the
Technical Association
of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Ohio TAPPI Meets at Hamilton

The Ohio Section of the Technical Association of the Pulp and Paper Industry met at the Anthony Wayne Hotel, Hamilton, Ohio, January 8, 1938. Vincent F. Waters of the Champion Paper and Fibre Company presided as chairman.

Following the dinner James R. Simpson, newly elected chairman of the Miami Valley Division of the Superintendents Association was introduced. Mr. Simpson commented on the excellent cooperation of the Ohio Section with the Division.

Ted Chemery of Champion presented the slate of the nominating committee, which was subsequently elected. The new officers are Chairman—Homer H. Latimer, Champion Paper Fibre Company, Hamilton, Ohio; First Vice Chairman—Howard W. Laymon, Mead Corporation, Chillicothe, Ohio; Second Vice Chairman—Howard H. Harrison, Crystal Tissue Company, Middletown, Ohio; Secretary-Treasurer—John E. Burdsall, Crystal Tissue Company; Executive Committeemen—Clarke Marion and Vincent F. Waters, Champion Paper and Fibre Company; O. P. Gephart, Miamisburg Paper Company, Miamisburg; Carl Roess, Wrenn Paper Company, Middletown; Val Friedrich, Beckett Paper Company, Hamilton; George H. Harvey, Gardner-Richardson Company, Middletown; and K. P. Geohegan, Aetna Paper Company, Dayton, Ohio.

Clarke Marion, vice president of Champion Paper and Fibre Company talked briefly and stressed the everlasting necessity for technical men to associate with the various operating men to promote good will and cooperation in the work that a company is trying to do through the research and control departments.

R. G. Macdonald, secretary-treasurer of the Technical Association outlined some of the future plans of the organization and explained the significance of several of the papers to be presented at the annual meeting to be held in New York on February 21-24, 1938.

Henry Keller of the Link-Belt Company, Philadelphia, Pa., gave an illustrated lecture on "Paper Mill Mechanical Positive Drives."

Robert A. Diehm of Rohm & Haas Company, Bristol, Pa., gave an interesting talk on the "Potentiality of Enzymes in the Paper Industry." This was followed by a brisk discussion of the subject.

Those in Attendance

Those present included the following:

W. W. Galloway and H. G. Funsett, Hagerstraw Board and Paper Company, Cedarville, Ohio; Robt. W. Weber, Mathieson Alkali Works, Cincinnati, Ohio; M. L. Barker and Wm. Reigers, Beckett Paper Company, Hamilton, Ohio; Myron Wittmer, Cheney Pulp and Paper Company, Franklin, Ohio; Robert S. Yates, C. E. Roth, George Fromm, R. C. Hydell and L. W. Whitaker, Mead Corporation, Chillicothe, Ohio; R. D. Smith, Stein-Hall Manufacturing Company, Chicago, Ill.

Henry Waffenschmidt, National Aniline and Chemical Company, Chicago, Ill.; T. Dahlgren, Gardner-Richardson Company, Middletown, Ohio; C. H. Tildes, J. E. Rhoads and Sons, Philadelphia, Pa.; J. F. Harding, Shuler & Benninghofen, Hamilton, Ohio; Tom O'Flynn, Wardlow-Thomas Paper Company, Middletown, Ohio; J. R. Simpson, Clarke Marion, Vincent Waters, and Homer H. Latimer, Champion Paper and Fibre Company, Hamilton, Ohio.

G. H. Woody and Henry G. Keller, Link-Belt Company, Philadelphia, Pa.; H. H. Harrison, Crystal Tissue Company, Middletown, Ohio; R. A. Diehm, Rohm and Haas Company, Inc., Philadelphia, Pa.; R. G. Macdonald, Secretary TAPPI, New York, N. Y.; Carl D. Roess, Wrenn Paper Company, Middletown, Ohio; J. R. Arthur, Aetna Paper Co., Dayton, Ohio; D. O. Patrick, Cheney Pulp and Paper Company, Franklin, Ohio; Roy W. Maggart and J. A. Hoerner, Champion Paper and Fibre Company, Hamilton, Ohio.

H. (Hal) Harvey, Penick and Ford, Ltd., Inc., New York, N. Y.; J. E. Burdsall, Crystall Tissue Company, Middletown, Ohio; W. A. Olsen, R. S. Haynes, H. F. Bennett, S. V. Rogers and C. R. Merriman, Gardner-Richardson Company, Middletown, Ohio; M. A. Youtz, Drackett Company, Cleveland, Ohio; Ed. Bush, Hooker Electrochemical Company, Niagara Falls, N. Y.; H. F. Cox, American Can Company, New York, N. Y.; M. Hurst and A. Bedeaux Anderson, Champion Paper and Fibre Company, Hamilton, Ohio; J. J. Burnett, Edward Lumm and Robt. K. Stevenson, Beckett Paper Company, Hamilton, Ohio; Rudolph Kutter, W. A. Macklenn and S. A. Starge, The Black-Clawson Company, Hamilton, Ohio; O. Wm. Hein, The Shartle Brothers Machine Company, Hamilton, Ohio.

Val Friedrich, Jr., Beckett Paper Company, Hamilton, Ohio; P. J. Jerardi and A. G. Gibson, Shartle Brothers Machine Company, Hamilton, Ohio; B. H. G. Smith, and B. C. Hope, Sorg Paper Company, Middletown, Ohio; T. M. Chemerys, Raymond Bard, Marvin A. Wynn, Fred G. L. Boyer, S. R. Olsen and E. F. Newkirk, Champion Paper and Fibre Company, Hamilton, Ohio; Charles J. Wright, Chillicothe Paper Company, Chillicothe, Ohio.

Review Of The Paper Industry Literature

Abstracts Compiled By the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson and Clarence J. West, Chairman of the Committee.

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Raw Materials

The Association of Xylan with Cellulose in Certain Structural Celluloses. Arthur G. Norman. Biochem. J. 30: 2054-2072 (1936).—The cellulose of most plants and woods differs from that of cotton in containing associated polysaccharides, known as cellulosans, which are tenaciously retained and must be considered as an integral part of the cellulose aggregate. Heat drying causes a change in both constituents of such a cellulose, affecting the xylan fraction the most. Xylan can be removed by treatment with acid or alkali, but there is a concurrent loss of hexosan. Plant celluloses show distinct differences in their behavior to hydrolytic and extracting agents. After solution and reprecipitation of a cereal cellulose, the xylan becomes almost completely soluble and the hexosan is largely unchanged. The results are in accord with the view that the cellulosans of plants and woods are oriented and participate in the micellae, being retained by secondary valence forces in the same way as parallel cellulose chains in pure cotton.—A.P.-C.

Sorption of Deuterium Oxide by Cellulose. T. King and C. Ouellet. Can. J. Research 14B: 444-449 (1936).—The sorption of deuterium oxide by cellulose at 23.4°C was investigated over the whole range of vapor pressures and found to show the same characteristics as that of ordinary water. The molar quantities sorbed at a given pressure are equal, and the kinetic curves exhibit the same features. After desorption of deuterium oxide, a small but permanent decrease in the weight of the cellulose was observed. This suggests an exchange reaction between deuterium and hydrogen atoms. —A.P.-C.

The Lyophilic Properties of Cellulose and Its Derivatives. VI. The Sorption Isotherm of Hydrated Cellulose Treated with Salt Solution of Multivalent Cations. Kisou Kanamaru and Takayoshi Nakamura. J. Soc. Chem. Ind. (Japan) 39, Supp. Binding: 418-425 (1936).—The salt solutions used were 0.0005 to 1% of hydrated aluminum chloride, 0.0014 to 2.8% hydrated thorium nitrate and 0.0001 to 0.5% of hydrated thorium chloride. The sorption isotherms were determined for two hydrated celluloses prepared from cellophane and viscose rayon, respectively. The results in regard to hygroscopicity and dielectric strength were identical with those reported in part V of this investigation. The effect of absorption of titanic acid ($TiO(OH)_2$ formed from titanium tetrachloride and sodium hydroxide) and that of titanium dioxide upon hydrated cellulose was also examined. Both hygroscopicity and the interfacial potential were found to decrease and did not show the typical behavior of the other salts. Both titanium dioxide and titanic acid always impart a negative charge, as typical colloidal acids even when the pH of the solution is rather high.—A.P.-C.

The Lyophilic Properties of Cellulose and Its Derivatives. VII. Regeneration of Cellulose from Viscose in the Electroneutral State. K. Kanamaru and Y. Fukuhara. J. Soc. Chem. Ind. (Japan) 39, Supp. Binding: 426-431 (1936).—By means of a spinning bath containing aluminum sulphate and with a laboratory spinning apparatus cellulose was regenerated in fiber form at various aluminum concentrations. The behavior of the interfacial potential and hygroscopicity of the regenerated cellulose were typical of results reported in parts IV and V. The tension and the titer of the fiber were parallel to the absolute value of its charge and hygroscopicity. Minimum values were obtained for regeneration in the neutral state. The strength of the fiber increased rapidly with the aluminum concentration to the neutral point and continued to increase above it at a slower rate. A theoretical discussion is given.—A. P.-C.

The Chemistry of Cellulose. Wanda K. Farr. Textile Research 6: 518-520 (1936).—A few observations are made concerning cellulose membrane formation.—A.P.-C.

Molecular Properties of Lignin Solutions from Viscosity, Osmotic-Pressure, Boiling-Point Raising, Diffusion and Spreading Measurements. D. L. Loughborough and Alfred J. Stamm. J. Phys. Chem. 40: 1113-1132 (1936).—The lignin was prepared from maple and spruce wood by three different methods. Only the lignin fractions soluble in organic solvents were used; these were true solutions showing no Tyndall cone even after standing for 2 yrs. Viscosity determinations showed conclusively that lignin is not a linear polymer like cellulose, and that it deviates definitely from the spherical, a probable shape factor being about 7.5. Determination of the molecular weight by the dynamic osmotic-pressure method of Sorensen gave values for the different lignins of 3900 ± 300. Within the experimental error, the average molecular weight is not affected by the solvent, the method by which the lignin was isolated, the number of reprecipitations (after the second) in the purification, the fractionation, the temperature at which the measurements were made, the presence of small amounts of water or of salts, or the concentration. Measurement of the boiling-point elevation by lignin in chloroform and acetone solutions in a modified Cottrell apparatus gave a molecular weight in good agreement with the osmotic-pressure values, although the experimental error due to fluctuations in temperature is somewhat greater. The determination of the diffusion constant was carried out by the method of Lamm in which the rate of change of concentration is measured by following the rate of change of refractive index. From this, by means of Einstein's diffusion

equation, molecular weights of 10,000±1000 were found. The osmotic-pressure and the boiling-point raising methods give no average values and are independent of shape. Diffusion measurements give weight average values, and are affected by shape. Two explanations for the difference in the molecular weight are offered, one depending on the concept of polydispersity and the other depending on the departure of the molecules from the spherical shape. Reasons are given to show that the latter explanation is probably correct. The true molecular weight is of the order of 3900±300, which is 4 times the empirical molecular weight. A possible set of molecular dimensions, based on the molecular weight of 3900, a film thickness of 16 Angstrom units obtained from spreading measurements of a chloroform solution on water, and the shape factor of 6-8, is of the order of 3 x 16 x 100 Angstrom units.—A.P.-C.

Alkaline Processes

Wood Pulp from Pine. M. F. Martynov and Yu. D. Veis. Tsentral. Nauch.—Issledovatel. Inst. Bumazh. Prom., Materially 1936, no. 1:75-92; C. A. 31:3263.—Experiments in laboratory and commercial production of wood pulp from pine by deresinification with sodium carbonate in the process of defibering are described. The constants of the fiber and newsprint were determined and compared with spruce pulp. Defibering at 80° C. with two per cent sodium carbonate based on the wood weight gave a pulp containing 1.5 times more resins than the corresponding spruce pulp. The mechanical properties of pine pulp are inferior to those of spruce pulp. Pulp obtained after 17 hours of defibering with sodium carbonate showed no "resin difficulties" in subsequent reworking and conversion into paper. The shortcoming of this process is considerable foaming, requiring the use of kerosene.—C.J.W.

Optimum Conditions for the Manufacture of Paper From Straw. O. G. Ioffe. Tsentral. Nauch.-Issledovated. Inst. Bumazh. Prom. Materialy 1936, No. 1: 162-210; C. A. 31:3268.—The use of straw materials (wheat, rye, barley, oat, rice and corn) in the production of paper is discussed from the technical and economical viewpoints.—C.J.W.

The Influence of Penetration in the Alkaline Delignification of Wood. Gerard L. Larocque and O. Maass. Can. J. Res. 15B: 89-97 (March, 1937).—The effect of various factors that might possibly influence the penetration of soda liquor into spruce wood was examined. The rate of delignification is the same irrespective of the size of the sample, from a wood meal of 0.005 mm. particle size up to a limiting chip thickness of about 10 mm. The density of wood had no influence on the delignification other than that which would be expected from the higher original lignin content of the more dense wood. The presence of moisture in the chips was without result other than that of diluting the liquor, and the addition of wetting agents for facilitating the penetration rate was without significant effect.—A.P.-C.

Canadian Technical Section Program

The Technical Section of the Canadian Pulp and Paper Association will meet at the Mount Royal Hotel, Montreal, P. Q., January 26-28, 1938. The program is as follows:

WEDNESDAY, JANUARY 26

High Speed Newsprint Operation, by A. J. Edward and G. D. Davidson.

Vapor Removal with the Cowan System, by J. H. P. Grenier.

Technical Section Luncheon.

Study of the Grewin System, by R. J. Chambers.

Data for Grinding Control, by J. Edwards.

Lubrication, movies by Imperial Oil Company.

Analysis of Grinding Action, by J. Edwards.

THURSDAY, JANUARY 27

Laboratory Tests for Measuring Printing Quality of Paper, by G. Larocque.

Work of the Cellulose Division, by Prof. Harold Hibbert (McGill University).

General Laws Governing the Absorption of Oil Into Paper, by G. Larocque.

Luncheon of Canadian Pulp and Paper Association and Visit to Exhibits.

FRIDAY, JANUARY 28

Sulphite Pulp for Fine Papers, by G. I. Hoover.

Sulphite Pulp for Folding Boxboard, by P. W. Codwise.

Troublesome Compounds and Reactions of Sulphur, by Fraser Companies.

Some Factors Affecting the Production of Uniform News Sulphite, by E. Norval Hunter.

Dirt in Sulphite Pulp, by W. A. Ketchen.

Joint Luncheon with the Woodlands Sections.

Discussion of papers of common interest to the Technical and Woodlands Sections.

A cabaret-dinner will be held at the Mount Royal Hotel under the auspices of the Canadian Pulp and Paper Association on Friday, January 28.

TAPPI Notes

An unusually good program is being arranged for the annual meeting of the Association to be held at Hotel Waldorf-Astoria, New York, February 21-24, 1938. Special sessions will cover bleaching, sulphite and kraft pulping, paper manufacture, stuff preparation (especially stock refining), fundamental research, paper drying, paper testing for printing surface, containers, paper inspection organization.

C. W. Richards recently with the Krebs Pigment and Color Corporation is now with the Oxford Miami Paper Company, W. Carrollton, Ohio.

Leon K. Larson, formerly with the R. T. Vanderbilt Company is now with Howell and Murchison, New York, N. Y.

The Kalamazoo Valley Section of TAPPI will meet at the Park-American Hotel, Kalamazoo, Mich., Thursday, January 20th at 6:30 P. M. This is the annual joint meeting with the Michigan Division of the Superintendents Association. Dr. R. F. Reed of the Lithographic Technical Foundation, Cincinnati, Ohio, will talk on "Lithography and Printing." Roy Zellers, Superintendent of the French Paper Company, Niles, Mich., will talk on "Employer-Employe Relationship." The program committee consists of Dan Stacy, W. F. Hathaway, Frank Whitting, Roy Barton, Paul de Guehery, Lester La Liberte and Al Perlick. Ralph Hayward, Vice President of the Kalamazoo Vegetable Parchment Company will be toastmaster at the banquet. About 250 are expected to attend.

Instrumentation Studies. XXIII

The Measurement of Elasticity and Compressibility by the Bekk Hardness Tester

By The Staff of The Institute of Paper Chemistry

The Bekk hardness tester is designed to measure elasticity and compressibility under dynamic load. Briefly, it provides, by means of a ballistic pendulum, for impacting with a spherical steel surface at a velocity of 1 meter per second and with the energy of an object of 100 grams a paper sample supported on a hardened steel plate. The pendulum falls from an arbitrarily selected initial amplitude and *elasticity* is measured by reading the height of pendulum rebound on a scale graduated in percentage of striking force. The designer of the instrument points out that this is quite a different property from *hardness*. Compressibility is determined by measuring the diameter of the impression made in the sample by the spherical face of the falling pendulum bob. The instrument is more fully described in the trade literature of R. Fuess Inc., who distribute the instrument in the United States, and by Bekk[1].

Compressibility is defined as the reciprocal of the bulk modulus, the bulk modulus being the ratio of pressure applied to change in volume produced. In evaluating paper it is determined as ratio of pressure to change in thickness. *Elasticity* is that property which causes a body to resist deformation and to wholly or partially return to its original dimensions from any distortion due to an applied stress.

The published information on the Bekk instrument indicates that there is a direct correlation between the elasticity and the compressibility measurements made with it. In a general way, such correlation does exist in many solid materials, but considering the nature of paper structure, that is, a structure of solid material interspersed with countless small air spaces, it would seem doubtful that such a correlation existed in this case. It might be expected that compressibility would vary widely, due to variations in the percentage solid fraction of different sheets and that, at the same time, elasticity would vary little, due to the uniform properties of the materials in the sheets. On the other hand, sheets with the same solid-air volume ratio might be expected to show little difference in compressibility but might vary appreciably in elasticity, due to variations in the force required to break down the sheet structure. As Bekk has pointed out[1] it must be remembered that elasticity is quite a different property from hardness. For this reason the instrument is, in one sense, incorrectly named.

From the practical viewpoint, the instrument is designed to evaluate paper in terms of its behavior on the printing press under printing pressure, or, more specifically, the ability of the paper to be compressed by the printing pressure and thus its ability to present a smoother surface to the printing plate than the surface it possesses in the absence of pressure or under low pressure. It is difficult to see where elasticity, as measured by height of rebound, is of value for this purpose unless compressibility is directly related to the elasticity measurement. The value of elasticity measurements, as such, in the evaluation of printing paper is not apparent, though they may have a value in certain special grades.

The relation of compressibility to printing quality deserves further comment. It is important because of its effect on the smoothness of the paper surface. Good printing with the letterpress process demands that the paper be smooth, so that a uniform contact is obtained between the paper surface and the inked printing plate. However, the topography, that is, the smoothness, of a paper sheet surface when not under pressure, may be quite different from that when it is pressed against a smooth, hard surface. It is generally recognized that smoothness measurements must be made under pressure if the results are to correlate with printing results. Some sheets, due to their composition and structure, are much more compressible than others. Thus, it is possible to have a condition where the rougher of two sheets when not under pressure may be the smoother under pressure and thus give the more uniform contact of the two with the printing plate. The pressure of the plate against the surface of the paper transfers the greatest force to the high spots and tends to force the sheet surface to a smooth plane. If the sheet is compressible, the high spots are flattened, temporarily at least, while if it is not, they tend to hold the plate from contact with the low spots. It is not necessary that all irregularities in sheet topography be taken care of by compression of the sheet structure for, during contact with the printing plate, the other side of the sheet is supported by a resilient packing and many of the irregularities are taken care of by the deflection of this packing. The packing is effective in compensating for the larger non-uniformities in sheet smoothness, while the compressibility of the sheet structure must compensate for finer non-uniformities. Many printing papers as made do not have the degree of smoothness or levelness necessary for good printing. The printing pressure levels the surface during printing. Papers vary widely in degree of compressibility and to some extent the degree of smoothness required depends upon the paper's compressibility. It, therefore, is of value to measure this property.

There are several methods available for the measurement of compressibility under static load by calipering the sheet under low pressure and at one or more higher pressures. The result is expressed as a function of pressure. The objection that can be raised to this method is that printing pressure is applied as a dynamic load rather than a static load. However, the measurement under static load appears to have several advantages in ease of application and interpretation.

It appears that a study of the Bekk instrument should be undertaken with the following premises:

1. The relation between the property of elasticity and the suitability for printing uses is not apparent, even though it may exist. The measurement of re-

[1] Paper-Maker 89: TS71-78 (May 1, 1935).

bound is therefore of importance only if it allows a convenient and accurate indirect measure of compressibility under dynamic load.

2. The compressibility of paper under dynamic load is an important property, since it is a determining factor in the quality of the printed sheet.

3. Compressibility under static load probably bears a close relation to that under dynamic load. It therefore is of importance to determine the correlation between the two.

Experimental Data

The laboratory work carried out is mainly concerned with a study of the test along the lines of the above premises. All tests were made at 65 per cent relative humidity and 70 deg. F. All samples were seasoned at these standard atmospheric conditions for at least twelve hours prior to testing.

Elasticity measurements are recorded as percentage rebound of the initial amplitude setting. The scale provided on the instrument was used. The precision with which rebound can be read varies with the magnitude of rebound. Results falling between 1 and 5 can be read to 0.2 scale unit, between 5 and 20 to 0.5 scale unit, and those above 20 to 1.0 scale unit. These same precisions apply, of course, to percentage rebound figures when an initial setting of 100 is used. When initial settings of 25 are used, the percentage readings between 20 and 40 per cent would have a precision of 1 per cent. Most papers fall in this range.

The method recommended for the measurement of compressibility consists of applying a thin film of ink to the spherical striking surface of the pendulum bob. In this work mimeograph ink was found to be the most satisfactory. After applying the ink to the spherical surface, the excess was wiped off with the finger. It is important to use as thin a film as possible. The diameter of the inked impression was measured with a measuring microscope supplied with the instrument. The diameter of the impression can be measured to a precision of 0.1 mm. From the diameter of impression, the depth of impression can be calculated from the approximate formula:

$$\frac{\text{Diameter (mm.}^2\text{)}}{800} = \text{Depth of impression in mm.}$$

In this report compressibility is expressed as diameter of impression. Caliper measurements were made by TAPPI standard method T 411 m and are reported in inches.

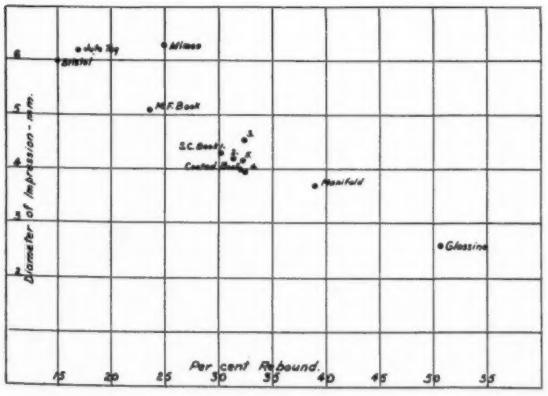


FIG. 1.
Correlation of diameter of impression with per cent rebounds. Initial setting of pendulum 100. Single sheet.

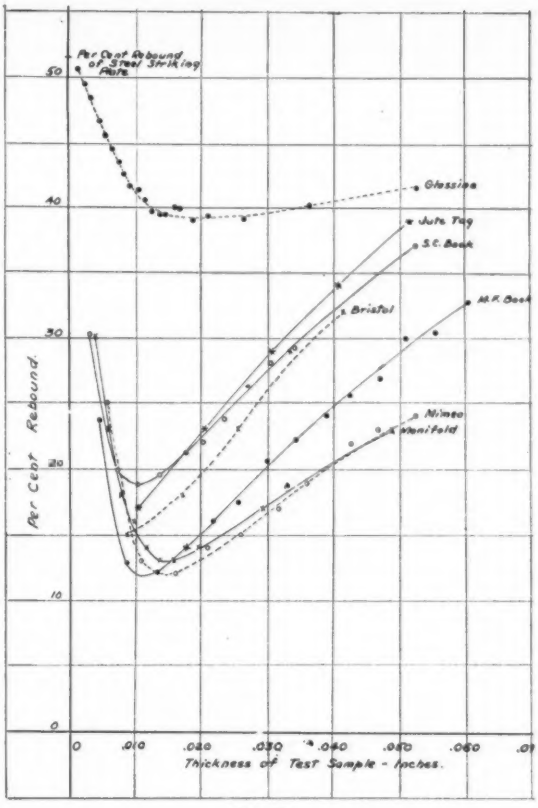


FIG. 2.
Per cent rebound as a function of thickness of test sample. Values for coated book not included; approximately the same as for S. C. book.

Tests on Single Sheets at 100 Initial Amplitude

Elasticity and compressibility were first determined on twelve samples representing a wide range in type of paper structure and including eight printing papers.

Sample	Basis Weight—lbs.		Furnish
Mimeograph	17.5	(17x22—500)	Groundwood + Sulphite
Machine Finish Book	60	(25x38—500)	Sulphite + Soda
Supercalendered Book 1	60	(25x38—500)	Sulphite + Soda
Supercalendered Book 2	48	(25x38—500)	Sulphite + Soda
Supercalendered Book 3	48	(25x38—500)	Sulphite + Soda
Supercalendered Book 4	49	(25x38—500)	Sulphite + Soda
Supercalendered Book 5	50	(25x38—500)	Sulphite + Soda
Coated Book	70	(25x38—500)	No. 2 Grade
Manifold	9	(17x22—500)	75 per cent Rag + 25 per cent Sulphite
Glassine	20.5	(24x36—500)	Sulphite
Bristol	52	(17x22—500)	Sulphite
Jute Tag	139	(24x36—500)	Jute sulphite

The five samples of supercalendered book are of similar quality but vary in furnish or conditions of manufacture and might be expected to exhibit the small variations found between different lots of a given grade.

The results are plotted in Figure 1. Fairly good correlation for all samples except the mimeograph is indicated. However, examination of the paper at the point of impact indicated that it was badly crushed in all the printing papers. The paper was noticeably more translucent at this point. This effect indicates a much greater compression force than that encountered during printing. The conclusion was drawn that many, and perhaps all, normal printing papers do not have sufficient structural strength to withstand

the force of impact received and are crushed to a dense structure, transferring an appreciable part of the impact to the steel plate. This gives the possibility of obscuring the elasticity of the paper by the elasticity of the plate. The fact that mimeograph, which was a noticeably softer sheet than the machine finished book, gave a slightly higher elasticity reading is further proof of this conclusion.

Tests on Pads of Sheets at 100 Initial Amplitude

A reduction in impact force acting on a single sheet can be accomplished in two ways. The initial amplitude of the pendulum can be reduced, or the number of sheets tested at one time can be increased. The latter was investigated first. For this work eight of the previously mentioned papers were used and with each the number of sheets placed on the striking plate at one time was varied from one to a number sufficient to give a thickness of approximately 0.05 inch. The results are given in Table I and the elasticity and compressibility plotted against thickness of test pad in Figures 2 and 3 respectively. The elasticity results represent the average of at least 10 determinations and the compressibility results an average of five. With an increasing thickness of sheets the compressibility increases in a regular manner as might be expected. The elasticity shows an irregular behavior. Six of the eight sheets show a decreasing elasticity with increasing thickness of from 0.010 to 0.015 inch. Single sheets of the other two papers had a thickness close to 0.01 inch; therefore, it is probable that their behavior is no different from that of the others.

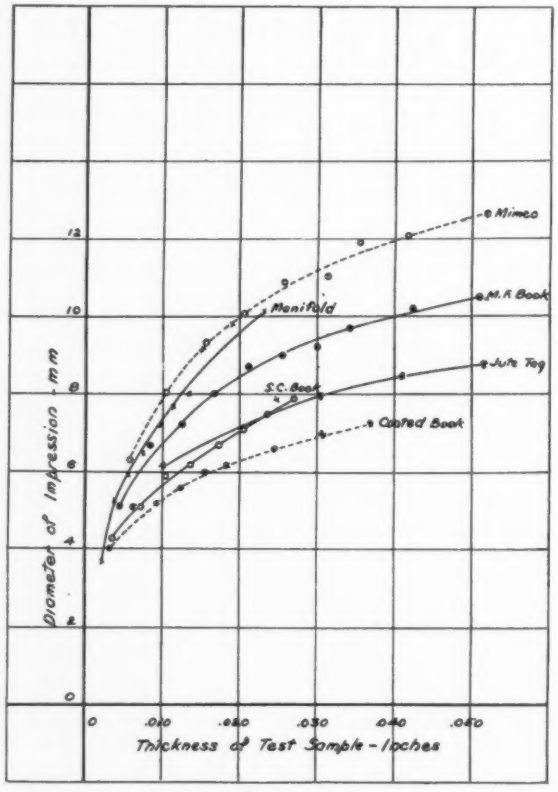


Fig. 3.
Diameter of impression as a function of thickness of test sample.

TABLE I

Number Sheets	Caliper 0.001"	Elasticity, Per cent Rebound	Compressibility Diameter of Impression—mm.
Mimeograph			
1	5.7	25	6.3
2	10.8	13	8.0
3	16.1	12	9.3
4	20.9	14	10.0
5	26.0	15	10.9
6	31.8	17	11.0
7	36.2	19	11.9
8	42.8	22	12.1
9	46.9	23	12.7
10	52.7	24	13.4
15	79.8	30	...
20	106.1	35	...
Machine Finish Book			
1	4.52	23.7	5.1
2	8.74	12.8	6.7
3	13.20	12.1	7.2
4	17.68	14.0	8.0
5	21.84	16.1	8.7
6	25.59	17.5	9.0
7	30.06	20.7	9.2
8	34.51	22.3	9.7
9	39.15	24.1	10.2
10	42.71	25.5	10.5
15	65.24	34.3	...
20	83.93	40.3	...
Supercalendered Book (1)			
1	3.69	30.2	4.3
2	7.14	19.9	5.1
3	10.37	18.8	5.9
4	13.63	19.5	6.2
5	17.26	21.2	6.7
6	20.38	22.1	7.1
7	23.60	23.8	7.5
8	27.03	26.3	7.9
9	30.79	28.1	...
10	34.38	29.3	...
15	52.50	37.1	...
20	69.82	41.3	...
35	121.25	49.5	...
Coated Book			
1	3.2	32	4.0
2	6.4	21	5.1
3	9.3	18	5.2
4	12.4	19	5.6
5	15.5	20	6.0
6	18.4	22	...
8	24.5	25	6.6
10	30.8	29	7.0
12	37.0	31	7.3
Manifold			
1	2.2	39	3.7
2	4.0	30	5.3
3	6.0	23	5.9
4	7.8	18	6.5
5	9.7	16	7.2
6	11.6	14	7.7
7	13.6	13	8.0
8	15.6	13	9.2
9	17.7	14	9.8
10	19.5	14	10.1
15	29.4	17	...
25	49.1	23	...
Glassine			
1	1.28	50.6	2.6
4	4.52	46.7	...
5	5.58	45.6	...
10	10.59	41.3	...
15	16.05	40.0	...
18	18.93	39.1	...
20	21.34	39.4	...
25	26.59	39.2	...
35	36.66	40.2	...
50	52.73	41.6	...
Bristol			
1	8.7	15	6.0
2	17.1	18	...
3	25.8	23	...
4	33.7	29	...
5	41.8	32	...
6	50.7	35	...
Jute Tag			
1	10.3	17	6.2
2	20.6	23	7.3
3	30.7	29	8.0
4	41.0	34	8.5
5	51.6	39	8.8
6	61.8	42	9.1

These results lend further support to the conclusions that conditions of test employing an initial amplitude of 100 and a single test sheet are not valid for the measurement on printing papers of the two properties under consideration. If the curves for the elasticity of papers of appreciably less than 0.010 caliper are extrapolated, it will be seen that they meet the ordinate at a point closely corresponding to the elasticity of the steel plate. From this it is concluded that for single sheets of thickness less than 0.010 inch,

the elasticity is a result of both the elasticity of the paper and that of the steel plate, that the elasticity of the paper may be largely obscured, and that the measurement is largely a function of sheet thickness. The curves for all of the papers except glassine lie close together in the range below 0.010 inch thickness. Results obtained at various thicknesses on one of these papers, using an initial pendulum setting of 25 (which are shown in Figure 5), are discussed later and lend further evidence for this explanation. With thicknesses higher than 0.010 inch, the results show a much greater spread and rank the papers in a more logical order.

The relatively high elasticity of one sheet and the rapid decrease in elasticity over the low range of increasing thicknesses can be explained as follows: Under these conditions the force of the falling pendulum bob is much greater than the paper will bear without complete compression. A part of the force is consumed in compressing the sheet and the remainder acts on the steel striking plate. Because of the alteration of sheet structure its elasticity is greatly lowered but the high elasticity of the steel produces a high rebound. The thinner the paper, that is, the less the energy loss in the paper, the greater the force acting on the steel and, hence, the higher the elasticity result. When a thickness of 0.010 inch is reached, the structural strength of the paper is sufficient to withstand complete crushing and the elasticity of the structure than becomes effective. If the use of a pad of test sheets were adopted for these measurements, a thickness in the range of 0.015 to 0.020 inch appears the most desirable. Above this thickness the difficulty of holding the pad of several sheets in proper position on the steel face increases and there is the probability that the stiffness of the paper may come into play to affect the results.

If a correlation existed between elasticity and compressibility, it could be expected for tests made on a pad of 0.020 inch thickness. The data in Figures 2 and 3 show that an accurate correlation does not exist. Coated book, tag, and supercalendered book have the same elasticity, whereas the compressibility of the coated book is materially lower than that of the other two. The smoother surface of the coated book may explain this. Though the other three papers are ranked in the same order by both measurements, there are small differences in elasticity and large differences in compressibility. To further check the possibility of obtaining a correlation between the two properties, elasticity and compressibility tests were made on pads of a number of sheets to give the nearest possible thickness to 0.010 inch. The results (Table II), each of which is the average of 5 separate tests, show no valid correlation.

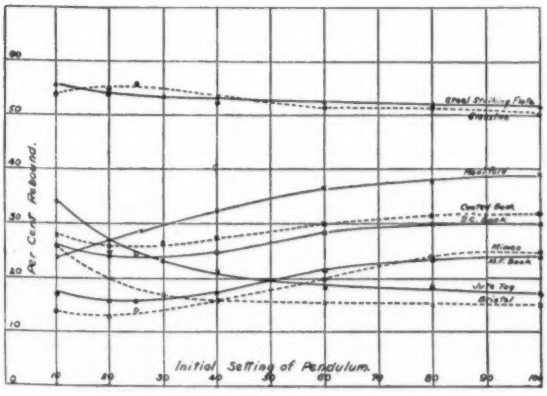


FIG. 4.
Per cent rebound as a function of initial setting of pendulum.

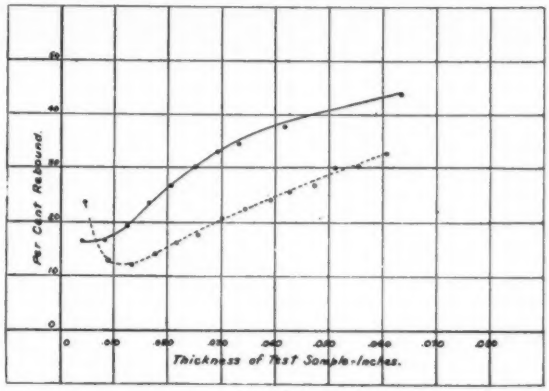


FIG. 5.
Per cent rebound as a function of thickness of test sample.

TABLE II

Paper	Number Sheets	Compressibility Diameter of impression, mm.	Elasticity, Per cent Rebound
Coated Book	4	5.9	19.0
Supercalendered Book (1)	3	6.0	18.8
Machine Finish Book	3	7.5	12.1
Mimeograph	2	8.0	13.0
Manifold	6	8.1	14.0
Glassine	10	5.1	41.3
Bristol	2	7.1	18.0
Jute Tag	1	6.2	17.0

Tests on Single Sheets with Reduced Initial Amplitude

The possibility of making elasticity measurements with smaller striking forces was investigated by varying the initial amplitude setting over the range from 100 to 10 on the arbitrary scale. Measurements were taken in this way on the steel striking plate and on 8 of the papers previously used. The results obtained are plotted in Figure 4. They show different effects with different papers. With jute tag and bristol the elasticity increases as the amplitude of the initial setting is decreased. The mimeograph and the three book papers decrease to a minimum value in the range of a 20-30 per cent initial amplitude and then increase as the amplitude is further reduced. Over a large part of the range the results for glassine follow very closely those obtained on the steel plate alone. At 10 per cent initial setting the trend appears to be definitely toward a lower elasticity. The manifold showed a decreasing elasticity throughout the range studied.

These results can be explained in a similar manner to those obtained when varying the thickness of the pad (Figure 2). With the papers of medium caliper, represented by the mimeo and three books, the force of impact is sufficient to completely crush the sample when the bob falls from the 100 per cent setting and elasticity is to a large extent the result of the elasticity of the steel block; i.e., a considerable part of the energy loss takes place in the steel plate. As the initial amplitude is decreased, the percentage due to elasticity of the steel plate decreases, but since the

paper is being completely crushed, the total elasticity also decreases. At a point in the range of 20-30 per cent initial setting, the striking force ceases to be enough to completely crush the paper and, with further reduction in initial setting, the elasticity increases, due to a lesser destruction of elastic properties by the impact.

If this is true, data taken on pads of increasing thickness, using an initial amplitude in the range of 25, should show an increase in elasticity with an increase in thickness. The difference should be apparent when the sample is increased from one to two sheets and continue for each further increase. Tests were made under these conditions and the results are plotted in Figure 5. They do show an increase throughout the range of thicknesses and indicate quite clearly that the high reading obtained with a single sheet at an initial setting of 100 is due to the elasticity of the steel plate. The high elasticity obtained with the manifold paper at a setting of 100 per cent is likewise due to a transmission of the striking force to the steel plate. As the amplitude is decreased the percentage of such transmission decreases but is not completely absent, even with an amplitude as low as 10 per cent. The jute tag and bristol have sufficient strength of structure to prevent an appreciable part (even with the 100 per cent setting) of the impact force being transmitted to the steel plate; i.e., the majority of the energy loss takes place in the paper.

The effect of reducing the initial amplitude setting on compressibility was also determined for three book papers and mimeograph. These results are plotted in Figure 6. With all samples studied, decreasing the initial setting decreases the compressibility, the decrease being approximately proportional to the decrease in setting. The four papers are definitely ranked in the same order of compressibility regardless of the initial setting used. Comparing these results with those for elasticity under like conditions previously discussed, it is seen that, while the ranking by compressibility remains the same throughout the range of initial settings studied and the decrease is approximately proportional to the decrease in setting, the ranking by elasticity changes in passing from a high to a low initial setting and the rate of change is not proportional in any way to the change in initial setting.

The data in Figure 4 indicate that, using a single sheet thickness with an initial amplitude of 25 when testing printing papers, the majority of the energy

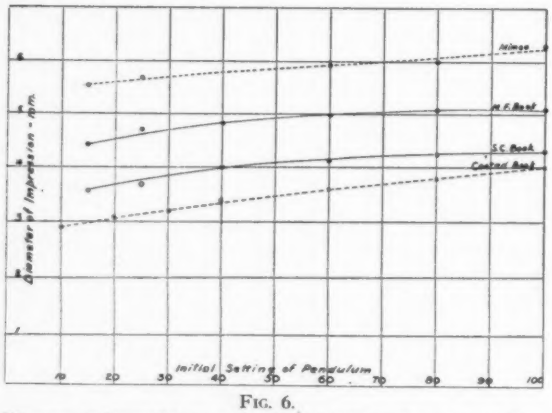


FIG. 6.
Diameter of impression as a function of initial setting of pendulum.

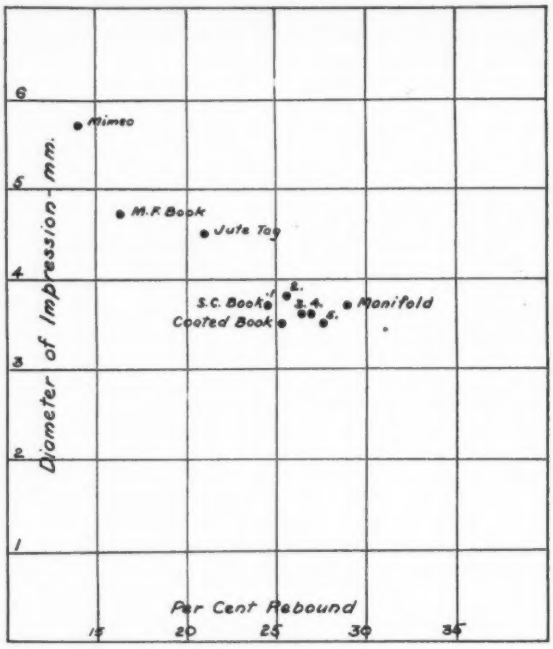


FIG. 7.
Correlation of diameter of impression with per cent rebound. Initial setting of pendulum 25. Single sheet.

loss takes place in the paper and the structure of the paper is not completely crushed. Elasticity and compressibility measurements were taken at this setting on single sheets of 10 of the 12 samples used in Figure 1. The results are plotted in Figure 7. Here the correlation is still only general and could not be used to determine the compressibility by measurement of elasticity.

On the basis of the results discussed, it is concluded that elasticity as measured by percentage rebound is not proportional to compressibility under dynamic load and cannot be used as a measure of that property. It is further concluded that false values for elasticity are obtained when an initial setting of 100 and a single test sheet are used. Under these conditions incorrect values for compressibility are also obtained, because a much greater compression takes place than in the printing operation. This condition can be corrected by reducing the initial amplitude of the pendulum or by increasing the number of sheets tested at one time. It is suggested that for printing papers an initial amplitude of 25 be used and a single sheet be tested. In other applications of the instrument it will be necessary to determine the correct conditions of test for the grade being tested.

Compressibility under Static Load

Because of the failure of rebound readings to give an accurate measure of compressibility under dynamic load, it was considered worth while to investigate the possibility of a correlation between compressibility under dynamic load and compression under static load. The equipment used consisted of a number 552 Schopper micrometer with a pressure foot 0.25 inch in diameter and a scale graduated to read thickness to 0.0005. The scale is of such size as to allow accurate estimation to 0.0001 inch. The upper end of the micrometer spindle is shaped to carry a removable weight. A cylindrical container was fitted

to the spindle in place of the weight. The spring tension of the instrument was adjusted as accurately as possible to give zero pressure on the sample when the container was empty. The sample to be measured was placed under the pressure foot and measured quantities of mercury added to the container to gradually increase the pressure on the sample. After the addition of each quantity of mercury, the micrometer reading was taken. The results obtained are plotted in Figure 8. Considering the small amount of compression and the small differences between papers of appreciably different qualities, it was concluded that a more sensitive micrometer would be necessary for an accurate study of this property.

The results are compared with the most significant of the previously recorded results on these papers in Table III. Bekk compressibility results obtained on a pad of sheets approximately 0.010 inch thick, using an initial amplitude of 100 and on a single sheet using a 25 initial amplitude, are included. The elasticity readings for the last named set of conditions are also included. For comparison, the reduction in caliper under static load expressed as thousandths of an inch should be used rather than the percentage compression, since the Bekk compressibility figures are proportional to actual compression rather than to percentage compression. When such a comparison is made, the compressibility under static load shows as good a correlation with the Bekk compressibility as with the other Bekk measurements. The compressibility under static load for the manifold sample is obviously inaccurate. This is due to the fact that this paper was finished with a slight cockle and the compressibility to a large extent represents the removal of this cockle. The differences in compressibility are too small to be of significance in the case of different papers of the same grade and to further study this property a more sensitive micrometer than that normally used for caliper measurements would be required.

The compressibility under static load of samples of multiple sheet thicknesses was measured on two of the samples used for the data in Table III but the results add nothing of value to the present discussion.

Application of Results

Little can be said about the correlation of the properties under discussion in this report to the printing quality of various papers, for such discussion must be based on extensive data taken from carefully controlled printing trials. The opportunity for obtaining this data has not presented itself and such data are not available in the literature. Compressibility under dynamic load would appear to have a significant bearing on the printing quality of paper and the instrument discussed provides a means for measuring this property, through the measurement of the diameter of the inked impression left by the falling bob. A study of measurements made by this procedure and their correlation to printing results should prove very valuable.

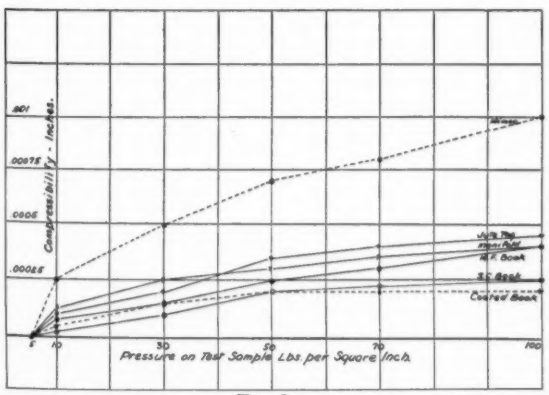


FIG. 8.
Compressibility-Static load.

TABLE III
COMPARISON OF COMPRESSIBILITY UNDER STATIC AND DYNAMIC LOAD

Sample	Caliper, 5 lbs./sq. in., .001 inch	Caliper, 100 lbs./sq. in., .001 inch	Reduction in caliper	Per cent reduction	Bekk Compressibility, 100 initial, 0.010" thick pack, mm.	Elasticity, Per cent Rebound, 25 initial, 1 sheet	Bekk Compressibility, 25 initial, 1 sheet, mm.
Mimeograph	5.3	4.3	1.0	18.9	8.4	14.1	5.7
M. F. Book.....	4.1	3.7	0.4	9.8	7.5	16.4	4.7
S. C. Book 1.....	3.3	3.05	0.25	7.6	6.0	24.5	3.7
S. C. Book 2.....	2.85	2.55	0.3	10.5	6.4	25.6	3.8
S. C. Book 3.....	2.75	2.50	0.25	9.1	6.6	26.3	3.6
S. C. Book 4.....	2.65	2.45	0.20	7.5	6.0	26.8	3.6
S. C. Book 5.....	2.85	2.60	0.25	8.8	6.0	27.6	3.5
Coated Book	3.0	2.8	0.20	6.7	5.7	25.3	3.5
Manifold	1.95	1.55	0.40	20.5	8.1	28.9	3.7
Jute Tag	10.55	10.10	0.45	4.26	6.2	21.0	5.5

Suggestions for Future Consideration of Compressibility

The quantities measured in determining compressibility either under dynamic load or static load are so small that instruments of high sensitivity are required. The differences found between different samples of supercalendered book in this work are so small that it seems important to increase the sensitivity of the measuring instruments as far as possible. It is believed that much has already been accomplished in this direction with the measurement of compressibility under static load, and it is recommended that the most sensitive equipment available be used for studies of this property. The Bekk instrument is the only available instrument for the measurement of the compressibility of paper under dynamic load. The following suggestions are offered as possibilities for increasing its sensitivity.

The curvature of the spherical striking surface determines the ratio of the diameter of impression to compressibility and the less the curvature, up to a certain point, the greater the ratio of diameter to compressibility, and therefore the more accurate the measurement. The curvature of the present striking surface has a 10 cm. radius. This is applicable to all papers, even those as compressible as blotting; therefore, the curvature is greater than needed on hard surfaced book papers and it is suggested that the effect of decreasing the curvature be studied with the objective of increasing the accuracy of impression measurements. A pendulum bob interchangeable with the present one could be supplied. Decreasing the curvature would distribute the impact over a larger area and therefore overcome the necessity of decreasing the initial amplitude setting.

If it is desired to measure elasticity under dynamic load, the measurement of per cent rebound could be made much more accurately if the length of the pendulum were increased. This would spread the rebound over a wider scale and allow greater precision in reading.

United States Patents on Paper Making

Fourth Quarter, 1937

Compiled by Clarence J. West, Chairman, Committee on Abstracts and Bibliography, TAPPI

The following list of patents has been compiled from the current numbers of the Official Gazette of the United States Patent Office. Since, as a rule, only one claim is published in the Gazette, it is not claimed that the list is complete.

Copies of any of the following patents may be obtained from the Patent Office, Washington, D. C., by sending ten cents ($0.10) for each patent desired. Personal checks and postage stamps are not accepted in payment for patents. Books of coupons containing 20 coupons or 100 coupons may be purchased for $2.00 or $10.00, respectively.

October 5, 1937

2,094,594. Bag making machine and method. Rene J. Gaubert, Oakland, Calif. Filed April 26, 1935. 19 claims. (Cl. 93-11).

2,094,613. Composite sheet material. Dorman McBurney and Raymond E. Thomas, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 25, 1935. 12 claims. (Cl. 154-2). Method of applying a tissue sheet to a basic sheet material coated with a cellulose derivative.

2,094,665. Stacker mechanism for paper cutting machines. Garrett W. Mudd, assignor to Peters Machinery Co., Chicago, Ill. Filed May 29, 1935. 4 claims. (Cl. 271-86).

2,094,674. Linoleum composition flooring material. William A. Sale and Walter J. Koening, assignors to Sloane-Blabon Corporation, Trenton, N. J. Filed Oct. 2, 1934. 2 claims. (Cl. 154-49).

2,094,717. Moistureproof material. Arloe R. Olsen, assignor to Hercules Powder Company, Wilmington, Del. Filed Feb. 1, 1935. 11 claims. (Cl. 91-68). Glassine paper and regenerated cellulose coated with a transparent chlorinated rubber film containing a compound having the hydrocarbon nucleus of abietic acid.

2,094,826. Double loading paper pile board. Frederick W. Seybold, assignor to American Type Founders, Incorporated. Filed Nov. 30, 1935. 9 claims. (Cl. 271-62).

2,094,886. Decalcomania. Frank Hart, Los Angeles, Calif. Filed Sept. 1, 1936. 12 claims. (Cl. 41-33).

2,094,919. Heat insulating tape. Samuel Hughes, assignor to Raybestos-Manhattan, Inc., Passaic, N. J. Filed June 18, 1934. 10 claims. (Cl. 154-44). An asbestos paper core, asbestos roving helically wrapped around the core and a fibrous sheath covering said core and roving.

2,095,040. Process of making die-cut bags. David Schmidt and Andrew A. Spisak, assignors to The Dobeckmun Company, Cleveland, Ohio. Filed Aug. 3, 1935. 5 claims. (Cl. 93-35).

2,095,067. Bag liner. James De Fprest Kirk, assignor to The Crepe Kraft Co. Inc., Newark, N. J. Filed May 29, 1935. 4 claims. (Cl. 229-55). Two superposed thicknesses of paper having duplex body portions.

2,095,118. Device for the manufacture of plates, sheets, or slabs of various properties from vegetable fibrous pulp. Hermann Basler, Berlin, Germany. Filed Sept. 29, 1934. 14 claims. (Cl. 92-61). A finishing press adapted to receive the form from the preshaping mold.

2,095,123. Wax paper machine. Le Roy F. Carkhuff, assignor to Self-Locking Carton Co., Chicago, Ill. Filed Aug. 17, 1935. 3 claims. (Cl. 242-56). Device for forming rolls from a web.

2,095,194. Pulp process. Adam Hoche, assignor to Cellulose Research, Inc., Chicago, Ill. Filed Nov. 2, 1934. 1 claim. (Cl. 92-9). Pulp treated for about 40 minutes to 2 hours with about 1 to 8 pounds of a substance selected from the group cane sugar, starch and molasses to 2,000 pounds of pulp and dilute nitric acid of about 40-45 deg. Bé. sufficient to well cover the mass and then filtering and washing free of acid.

2,095,199. Apparatus for ornamenting paper or the like. James Speed, assignor to Strathmore Paper Company, West Springfield, Mass. Filed April 16, 1936. 6 claims. (Cl. 101-32).

2,095,205. Method of and apparatus for opening bags and forming recesses therein. David Schmidt, assignor to The Dobeckmun Company, Cleveland, Ohio. Filed Aug. 9, 1935. 20 claims. (Cl. 92-35).

October 12, 1937

2,095,248. Roofing and siding element. Norman P. Harshberger, assignor to Bakelite Building Products Co. Inc., New York, N. Y. Filed June 12, 1933. 9 claims. (Cl. 91-68).

2,095,249. Roofing and siding element. Norman P. Harshberger, assignor to Bakelite Building Products Co. Inc., New York, N. Y. Filed June 12, 1933. 5 claims. (Cl. 91-68).

2,095,361. Variable flow pulp treating machine. John D. Haskells, assignor to Dilts Machine Works, Inc., Fulton, N. Y. Filed Jan. 11, 1934. 1 claim. (Cl. 92-43).

2,095,369. Thermal insulation. Robert G. Quinn, assignor to International Paper Company, New York, N. Y. Filed April 25, 1934. 1 claim. (Cl. 154-45).

2,095,378. Apparatus for the manufacture of paper. Edgar Alexander Charlton, assignor to International Paper Company, New York, N. Y. Filed Dec. 17, 1934. 2 claims. (Cl. 92-45). Means of rotating a roll at a different rate than the rate of travel of wire above.

2,095,389. Process of making veneer articles. Henry Kondolf, assignor to Southern Kraft Corporation, New York, N. Y. Filed July 5, 1934. 7 claims. (Cl. 93-36). Adhering a facing sheet to green veneer to form a composite sheet for a carton.

2,095,471. Web drying device for waxing machines. Ralph A. Hayward, assignor to Kalamazoo Vegetable Parchment Company, Parchment, Mich. Filed Nov. 15, 1935. 11 claims. (Cl. 34-48).

2,095,516. Paper winding machine. Jacob F. Albright, Bastrop, La. Filed Dec. 7, 1934. 11 claims. (Cl. 287-52). Snap-on collar for winder shaft.

2,095,546. Treatment of chemical pulp. Frederick F. Frick, assignor to International Smelting and Refining Company, East Chicago, Ind. Filed Oct. 2, 1935. 11 claims. (Cl. 210-1).

2,095,672. Cake plate of molded fibrous material. Paul C. Miller, assignor to Mapes Consolidated Manufacturing Company, Griffith, Ind. Filed March 20, 1936. 13 claims. (Cl. 65-15).

2,095,686. Cake plate of molded fibrous material. Torris H Alfreds, assignor to Mapes Consolidated Manufacturing Company, Griffith, Ind. Filed March 30, 1936. 5 claims. (Cl. 65-15).

2,095,706. Composite laminated panel. Carl W. Krause, assignor to Wilson and Co., Inc., Chicago, Ill. Filed Oct. 17, 1935. 5 claims. (Cl. 154-45.9). A consolidated core of fabric layers impregnated with a blood binder and a surface layer consolidated under heat and pressure with the core of a fabric layer impregnated with a synthetic resin binder

2,095,771. Bag transformer. Charles F. Sparks, St. Louis, Mo. Filed May 15, 1937. 13 claims. (Cl. 93-8).

2,095,775. Cup making machine. George W. von Hofe and Paul W. Fleischer, assignors to New Jersey Machine Corporation, Hoboken, N. J. Filed April 29, 1936. 17 claims. (Cl. 93-39.1).

2,095,887. Treatment of casein. William Howard Nicol, assignor to Wingfoot Corporation, Wilmington, Del. Filed July 5, 1935. 1 claim. (Cl. 134-23.9). Method of solution of casein.

2,095,898. Treatment of fabrics. Wm. D. Wolfe, assignor to Wingfoot Corporation, Wilmington, Del. Filed May 4, 1934. 15 claims. (Cl. 91-68). Method of waterproofing with a partially hydroschlorinated rubber hydrochloride.

2,095,919. Manufacture of cigarette paper blocks. Henri Chambon, assignor to Société Anonyme de Anciens Etablissements L. Chambon, Paris, France. Filed March 20, 1936. 6 claims. (Cl. 270-41).

October 19, 1937

R20,533. Screen plate for paper making machines. Frank Dunstan, assignor to William A. Hardy and Sons Co., Fitchburg, Mass. Original No. 2,015,141, dated Sept. 24, 1935. Application for reissue Feb. 24, 1937. 8 claims. (Cl. 92-30).

2,095,696. Method and apparatus for preventing dust deposition. Dean D. Crandall, assignor to National Gypsum Company, Buffalo, N. Y. Filed Feb. 20, 1935. 7 claims. (Cl. 34-12).

2,096,122. Cellulosic structure and method for preparing same. Dorothy Bateman Maney, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Nov. 6, 1934. 17 claims. (Cl. 91-68). Method of applying a thin, transparent layer of sulphur to a sheet used for wrapping.

2,096,129. Manufacture of sized papers. Oscar F. Neitzke, assignor to Bennett, Incorporated, Cambridge, Mass. Filed Feb. 24, 1936. 12 claims. (Cl. 92-21). Use of a wax-rosin size.

2,096,242. Roofing and siding element. Norman P. Harshberger, assignor to Bakelite Building Products Co., Inc., New York, N. Y. Filed Aug. 7, 1934. 18 claims. (Cl. 108-7).

2,096,400. Bleaching of wood. Wolf Kritchevsky, Chicago, Ill. Filed Aug. 29, 1935. 14 claims. (Cl. 8-2). Preliminary treatment with an organic nitrogeneous base which does not form colored oxidation products and then with an aqueous solution of a peroxide.

October 26, 1937

R20,541. Delivery mechanism for paper box machine. Edwin G. Staude, Minneapolis, Minn. Original No. 1,986,023, dated January 1, 1935. Application for reissue March 23, 1935. 40 claims. (Cl. 271-76).

2,096,743. Method of treating cellulosic materials. Max Henkels, Flushing, N. Y. Filed June 22, 1935. 25 claims. (Cl. 18-47.5). Method of molding dry pulp under a pressure of at least 2,000 lbs. per square inch.

2,096,784. Roofing. William Wallace Candler, Detroit, Mich. Filed July 12, 1934. 1 claim. (Cl. 108-7).

2,096,788. Method and apparatus for making bags. Thomas Earl Coty, Watertown, N. Y. Filed Sept. 15, 1934. 5 claims. (Cl. 93-22).

2,096,789. Apparatus for making bags. Thomas Earl Coty, Watertown, N. Y. Filed Aug. 11, 1936. 12 claims. (Cl. 93-8).

2,096,876. Bituminous compositions. Charles J. Bitzer, assignor to Standard Oil Development Company, Linden, N. J. Filed May 25, 1934. 2 claims. (Cl. 134-51). Bituminous material containing 5-10 per cent ground mica and 30-35 per cent ground slate.

2,096,888. Process of saturating fibrous conduits. George Emberg, assignor to The Barrett Company, New York, N. Y. Filed Aug. 13, 1935. 8 claims. (Cl. 91-70).

2,096,968. Shingle. Robert T. Johnston, assignor to The Lehon Company, Chicago, Ill. Filed June 13, 1935. 6 claims. (Cl. 108-7).

2,096,973. Method of producing paper having a mirror-like luster. Carl Munch, assignor to Atlas-Ago, Chemische Fabrik Aktiengesellschaft, Molkau, near Leipzig, Germany. Filed May 11, 1935. 4 claims. (Cl. 91-70). Paper carries a layer of wax, resin, rubber, gelatin or glue and a top layer of cellulose ester and is heated under a light pressure.

2,096,976. Paper towel. George A. Richter and Milton O. Schur, assignors to Brown Company, Berlin, N. H. Filed Dec. 12, 1931. 4 claims. (Cl. 92-68). Paper web is treated with formaldehyde, then with a strong solution of mineral acid.

2,096,977. Production of cellulose acetate and analogous cellulose esters. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed May 14, 1936. 15 claims. (Cl. 260-101). Cellulose is treated with sulphur dioxide and then with hydrogen peroxide.

2,097,121. Process for the prevention and removal of foam in the manufacture of paper. Richard Fromm, assignor to Lehmann & Voss & Company, Hamburg, Germany. Filed June 17, 1936. 4 claims. (Cl. 92-21). A material consisting essentially of a phosphatide is added to the aqueous suspension of fibrous material.

2,097,183. Bag making machinery. Gordon William French, Bristol, England. Filed May 15, 1936. 8 claims. (Cl. 93-33).

2,097,196. Method and machine for forming fibrous slip covers. Leon E. La Bombard, assignor to Oswego Falls Corporation, Fulton, N. Y. Filed No. 11, 1935. 9 claims. (Cl. 93-36.5).

2,097,239. Abating foaminess in glues. Lawrence Bradshaw, Bainbridge, N. Y. Filed April 23, 1935. 11 claims. (Cl. 134-23.8).

2,097,299. Twisted paper cord. John E. Millett, assignor to Grand Rapids Fibre Cord Company, Grand Rapids, Mich. Filed Aug. 17, 1935. 3 claims. (Cl. 117-60).

2,097,301. Envelope machine. Abraham Novick, assignor to F. L. Smithe Machine Co., Inc., New York, N. Y. Filed Aug. 11, 1932. 9 claims. (Cl. 271-29).

2,097,315. Coating roll and process of producing the same. George B. Watkins, assignor to Libbey-Owens-Ford Glass Company, Toledo,

Ohio. Filed Feb. 20, 1931. 4 claims. (Cl. 91-67.8). A rubber body portion and a protective coating of a polyhydric alcohol-polybasic acid resin.

2,097,417. Rubber impregnated fibrous material. Stephen B. Neiley, assignor to Dewey and Almy Chemical Company, North Cambridge, Mass. Filed Dec. 12, 1935. 2 claims. (Cl. 91-68).

2,097,420. Centrifugal fractionation of finely divided solids into substantially uniform solids fractions of varying average particle size. Sanford C. Lyons, assignor to Bird Machine Co., Walpole, Mass. Filed June 26, 1937. 2 claims. (Cl. 233-18). Method of fractionation of a clay surry.

NOVEMBER 2, 1937

2,097,509. Fireproofing. Ernest R. Boller, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Feb. 1, 1935. 5 claims. (Cl. 21-20). A solution of an ammonium salt and urea.

2,097,601. Method and apparatus for coating paper and the like. Adolph Potdevin, assignor to Potdevin Machine Company, Brooklyn, N. Y. Filed June 1, 1935. 16 claims. (Cl. 91-70).

2,097,694. Insulating cellulosic medium. Frederick W. Hochstetter, Pittsburgh, Pa. Filed Nov. 15, 1934. 15 claims. (Cl. 154-28). Product is made heat-resisting, then dehydrated and heated so as to carbonize either one or both surfaces.

2,097,754. Stencil sheet. George Burt Bradshaw, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 27, 1935. 5 claims. (Cl. 41-38.6). Methyl methylacrylate is used in the coating.

2,097,772. Envelope or bag making machinery. Abraham Novick, assignor to F. L. Smithe Machine Co., Inc., New York, N. Y. Filed Dec. 12, 1933. 7 claims. (Cl. 271-76).

2,097,780. Slow burning match. Herman Silver, East Orange, N. J. Filed Feb. 20, 1936. 2 claims. (Cl. 44-44). Cardboard is impregnated with sodium nitrate.

2,097,899. Method of forming containers. Swan Smith, assignor to David C. Shepard, St. Paul, Minn. Filed Dec. 5, 1935. 8 claims. (Cl. 93-39.1). Method of forming the side wall structure of a conical container from a length of paper.

2,098,008. Method of and apparatus for molding articles of paper pulp. Harvey V. Mitchell, Bridgeport, Conn. Filed Jan. 12, 1935. 16 claims. (Cl. 92-58).

2,098,042. Stencil sheet. Shinjiro Horii, Tokyo, Japan. Filed May 27, 1936. 1 claim. (Cl. 41-38.6). Coating material is given.

2,098,043. Stencil sheet. Shinjiro Horii, Tokyo, Japan. Filed May 7, 1937. 2 claims. (Cl. 41-38.6). Coating material given.

2,098,082. Reaction product of cellulosic material. Albert Henry Bowen and Theodore Williams Dike, assignors to I. F. Laucks, Inc., Seattle, Wash. Filed Nov. 19, 1934. 6 claims. (Cl. 91-68). Cellulose material with zinc chloride, urea and formaldehyde.

2,098,083. Synthetic resin adhesive. Albert Henry Bowen and Theodore Williams Dike, assignors to I. F. Laucks, Inc., Seattle, Wash. Filed Nov. 21, 1934. 20 claims. (Cl. 91-68). A composition embodying a zinc chloride-urea-formaldehyde condensation product and a sizing adhesive agent from the the group consisting of animal glue, casein, starch and gum arabic.

2,098,111. Process for treatment of vegetable fiber. James S. Sconce, assignor to Hooker Electrochemical Company, New York, N. Y. Filed May 4, 1935. 15 claims. (Cl. 8-2). Method of bleaching with chlorine, using an excess, and adding lime to form a hypochlorite.

2,098,193. Heat insulation. Carl Georg Munters, assignor to Aktiebolaget Termisk Isolation, Stockholm, Sweden. Filed March 1, 1934. 4 claims. (Cl. 154-28). Plurality of sheets forming intervening gas layers.

NOVEMBER 9, 1937

2,098,221. Cement or binder material. Philip S. Barnhart, assignor to Westfield River Paper Company, Russell, Mass. Filed Jan. 15, 1936. 4 claims. (Cl. 134-17). Paraffin wax, melting 155 deg. F. 40-63 per cent, rosin 20-45 per cent, rubber 3-12 per cent and petrolatum 7-13 per cent

2,098,222. Method of making cement or bonding material. Philip S. Barnhart, assignor to Westfield River Paper Company, Russell, Mass. Filed Jan. 15, 1936. 4 claims. (Cl. 134-17). Method of making a cement from wax, rosin, rubber and petrolatum.

2,098,223. Laminated sheet of paper or like material. Philip S. Barnhart, assignor to Westfield River Paper Company, Russell, Mass. Filed Jan. 15, 1936. 4 claims. (Cl. 154-50). A laminated paper sheet from glassine paper united by a binder of paraffin wax, rosin, rubber and petrolatum.

2,098,279. Bandless jordan plug. Alfred Dorman, assignor to E. D. Jones and Sons Company, Pittsfield, Mass. Filed Dec. 5, 1934. 5 claims. (Cl. 92-27). A construction in which all the parts, including filler blocks, are positively locked together by pin-and-shoulder, mortise or like engagements.

2,098,502. Inner-sole. Robert M. Lehner, Lynn, Mass. Filed Nov. 29, 1935. 5 claims. (Cl. 36-43). An inner-sole made of a single piece of paper material, with suitable stiffening treatment.

2,098,533. Method or process of treating paper. Herman Carew, assignor to Dixie-Vortex Company, Chicago, Ill. Filed May 8, 1934. 3 claims. (Cl. 91-70). Method of coating receptacles with high temperature paraffin at the point of manufacture and then applying a coating of low temperature paraffin after shipment to the point of use and just prior to filling.

2,098,534. Moistureproof article. William Hale Charch, Merlin Martin Brubaker and Frederick M. Meigs, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 21, 1934. 9 claims. (Cl. 91-68). The moistureproofing agent is a high melting alcohol, such as diheptadecylcarbinol or methylphenyloctadecylcarbinol.

2,098,535. Moistureproof article. William Hale Charch, Merlin Martin Brubaker and Frederick M. Meigs, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 21, 1934. 14 claims. (Cl. 91-68). Moistureproofing agent is an ether having a melting point of at least 37 deg. C., and having at least 18 carbon atome for the ether-oxygen group.

2,098,536. Moistureproof article. William Hale Charch, Merlin Martin Brubaker and Frederick M. Meigs, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 21, 1934. 19 claims. (Cl. 91-68). The moistureproofing agent is a solid organic polyether having a melting point of at least 73 deg. C.

2,098,537. Moistureproof article. William Hale Charch, Merlin Martin Brubaker and Frederick M. Meigs, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 31, 1934. 10 claims. (Cl. 91-68). Waterproofing agent is a solid organic ketone, having a melting point of at least 37 deg. C.

2,098,538. Moistureproof article. William Hale Charch, Merlin Martin Brubaker and Frederick M. Meigs, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 21, 1934. 11 claims. (Cl. 91-68). The moistureproofing agent is an aryl-substituted amide with a melting point of at least 37 deg. C.

2,098,539. Moistureproof article. William Hale Charch, Merlin Martin Brubaker and Frederick M. Meigs, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 21, 1934. 19 claims. (Cl. 91-70). The waterproofing agent is an organic halogen compound having a melting point of at least 37 deg. C.

2,098,540. Moistureproof article. William Hale Charch, Merlin Martin Brubaker and Frederick M. Meigs, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 21, 1934. 14 claims. (Cl. 91-68). The waterproofing agent is a monobasic acid ester of a monohydric ether alcohol, having a melting point of at least 37 deg. C.

2,098,541. Moistureproof article. William Hale Charch, Merlin Martin Brubaker and Frederick M. Meigs, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 21, 1934. 22 claims. (Cl. 91-68). The waterproofing agent is an organic metallic compound, having a melting point of at least 37 deg. C.

2,098,542. Moistureproof article. William Hale Charch, Merlin Martin Brubaker and Frederick M. Meigs, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 21, 1934. 28 claims. (Cl. 91-68). The moistureproofing agent is a solid organic compound (thio ethers, mercaptans, thio aldehydes or thio acids), having a melting point of at least 37 deg. C.

2,098,642. Method and means for forming articles from paper. Harold E. Cude; Agnes Hall Cude, Manchester, Conn., administratrix. Filed July 30, 1936. 12 claims. (Cl. 93-1). Articles formed from continuous strips of paper.

2,098,733. Plyboard. John W. Sale, assignor to Hummel-Ross Fibre Corporation, Hopewell, Va. Filed Sept. 20, 1937. 7 claims. Cl. 92-39). A facing sheet of paper formed on the continuous wire of a fourdrinier type machine, comprising two co-extensive strata of cellulosic fibers having varying amounts of stock hydration.

NOVEMBER 16, 1937

2,098,970. Envelope machine. Abraham Novick, assignor to F. L. Smithe Machine Co., Inc., New York, N. Y. Filed May 18, 1933. 11 claims. (Cl. 93-62).

2,098,993. Asbestos filled drier felt. William A. Barrell, assignor to Lawrence Duck Company, Lawrence, Mass. Filed Aug. 15, 1935. 8 claims. (Cl. 139-426).

2,098,994. Asbestos-faced drier felt. William A. Barrell, assignor to Lawrence Duck Company, Lawrence, Mass. Filed Aug. 15, 1935. 7 claims. (Cl. 139-426).

2,099,012. Optical testing. Albert S. Goodrich and Charles R. Tait, assignors to Hammermill Paper Company, Erie, Pa. Filed May 29, 1935. 9 claims. (Cl. 88-14). Means for inspecting the surface of a sheet of paper.

2,099,014. Method of producing canillin from waste sulphite liquor. Raymond S. Hatch, assignor to Weyerhaeuser Timber Company, Tacoma, Wash. Filed June 27, 1936. 6 claims. (Cl. 260-137). The waste liquor is treated with alkali until the pH is about 13 and then heated at 180-220 deg. C. for not more than 30 minutes.

2,099,093. Roof composition and method of producing the same. Henry C. Avery, assignor to The Patent and Licensing Corporation, New York, N. Y. Filed March 28, 1932. 4 claims. (Cl. 91-70).

2,099,094. Roofing. Henry C. Avery, assignor to The Patent and Licensing Corporation, New York, N. Y. Filed May 9, 1934. 1 claim. (Cl. 91-68).

2,099,131. Thick butt shingle. Stuart P. Miller, assignor to The Barrett Company, New York, N. Y. Filed Feb. 27, 1934. 6 claims. (Cl. 108-7).

2,099,137. Machine for making match packets. John R. Nolan, assignor to The Diamond Match Company, Wilmington, Del. Filed Aug. 12, 1936. 21 claims. (Cl. 93-2).

2,099,160. Method and apparatus for drying. William Hale Charch, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Oct. 23, 1935. 1 claim. (Cl. 34-48). Method of drying a highly shrinkable, non-fibrous, transparent cellulose web adapted to be used as a wrapping tissue.

2,099,162. Process and apparatus for drying. Walter C. Eberlin, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Oct. 23, 1935. 4 claims. (Cl. 34-48). Method of drying highly shrinkable, non-fibrous, transparent cellulosic webs.

2,099,301. Paper wrapper for commodities. Carl S. Hammersley, New York, N. Y., and Sumner C. Fairbanks, Passaic, N. J.; said Fairbanks assignor to said Hammersley. Filed Sept. 21, 1933. 10 claims. (Cl. 229-87). Waxed paper wrapper having along certain margins a coating of bonding material unreactive toward wax.

2,099,313. Unwinding apparatus for paper webs and the like. Adolph Potdevin, assignor to Potdevin Machine Company, Brooklyn, N. Y. Filed Oct. 8, 1935. 1 claim. (Cl. 242-76).

2,099,314. Cutting-off mechanism for bag making machines and the like. Adolph Potdevin, assignor to Potdevin Machine Company, Brooklyn, N. Y. Filed Nov. 7, 1935. 3 claims. (Cl. 164-68).

2,099,351. Bituminous emulsion. Preston R. Smith, assignor to The Barber Company, Inc., Philadelphia Pa. Filed Jan. 27, 1934. 6 claims. (Cl. 134-1). Stable, aqueous clay emulsion of bitumen of the oil-in-water type.

2,099,352. Bituminous emulsion. Preston R. Smith, assignor to The Barber Company, Inc., Philadelphia, Pa. Filed Jan. 27, 1934. 13 claims. (Cl. 134-1). Aqueous clay emulsion of bitumen of the oil-in-water type containing a copper salt of a monobasic acid.

2,099,353. Bituminous emulsion. Preston R. Smith, assignor to The Barber Company, Inc., Philadelphia, Pa. Filed Jan. 27, 1934. 15 claims. (Cl. 134-1). An aqueous clay emulsion of the oil-in-water type containing a lead salt.

2,099,399. Method of manufacturing paper pulp. Edwin P. Jones, assignor to Champagne Paper Corporation, New York, N. Y. Filed Oct. 16, 1936. 1 claim. (Cl. 92-16). Rags are cooked with sulphur, calcium oxide and sodium carbonate.

2,099,400. Preparation of paper pulp. Edwin P. Jones, assignor to Champagne Paper Corporation, New York, N. Y. Filed Oct. 19, 1936. 2 claims. (Cl. 92-16). Flax or hemp tow is cooked with sodium hydroxide and sulphur.

2,099,571. Method and means for making a covering for surfaces exposed to the weather. Winfred H. Outman, assignor to Certain-Teed Products Corporation, New York, N. Y. Filed May 29, 1931. 23 claims. (Cl. 91-30). Method of forming channels in coating of the sheet and covering the channels with granular material.

2,099,572. Covering for surfaces exposed to the weather. Winfred H. Outman, assignor to Certain-Teed Products Corporation, New York, N. Y. Filed April 30, 1936. 12 claims. (Cl. 108-7).

2,099,598. Fiberboard. John D. Carter, assignor to Philadelphia Quartz Company, Philadelphia, Pa. Filed March 27, 1935. 2 claims. (Cl. 154-40). Using an adhesive of a partly neutralized alkali-metal silicate, the adhesive is rendered practically insoluble by keeping it in a humid atmosphere at about 60 deg. C. for at least 45 minutes.

NOVEMBER 23, 1937

2,099,726. Paper and method of making same. Lloyd L. Dodge, assignor to Rhinelander Paper Company, Rhinelander, Wis. Filed June 20, 1935. 3 claims. (Cl. 92-40). Method of making a waxed paper of enhanced transparency and pliability.

2,099,880. Composition of matter adapted for increasing the water-resistance of fibrous substances and process of making same. Carleton Ellis, assignor to Ellis-Foster Company, Montclair, N. J. Filed Nov. 22, 1929. 3 claims. (Cl. 134-22). A paper sizing composition comprising blown wax softened with an oil.

2,099,936. Art of manufacturing containers or parts thereof. Herbert M. Kieckhefer, assignor to Kieckhefer Container Company, Delair, N. J. Filed June 8, 1936. 12 claims. (Cl. 93-36).

2,100,022. Container assembling machine. Samuel Bergstein, Cincinnati, Ohio, assignor to Edna May Bergstein and Robert Morris Bergstein, as trustees. Filed Aug. 6, 1934. 9 claims. (Cl. 93-6).

2,100,047. Process of manufacturing soap. Karl Braun, Berlin-Frohnau, and Hermann Plauson, Berlin, Germany. Filed March 20, 1936. 5 claims. (Cl. 87-16). Method of utilizing sulphite waste liquor in the manufacture of clear soap.

2,100,079. Cutting and winding machine. Oscar I. Judelshon, Park Ridge, N. J. Filed May 26, 1936. 23 claims. (Cl. 164-65).

2,100,140. Decalcomania. Ferdinand W. Humphner, assignor to Mid-States Gummed Paper Co., Chicago, Ill. Filed Jan. 15, 1936. 2 claims. (Cl. 41-33).

2,100,149. Method and arrangement for filtering waste water (back water) from paper cellulose, and wood pulp factories, etc. Olaf Oviller, assignor to A/S Thunes Mekaniske Vaerksted, Skoerjen by Oslo, Norway. Filed Feb. 14, 1936. 5 claims. (Cl. 210-201). Method of filtering through a pulp layer formed on a cloth filter.

2,100,294. Method and machine for producing brazed seams in wire cloth. Nelson W. Webb, assignor to Eastwood-Neally Corporation, Belleville, N. J. Filed June 13, 1936. 28 claims. (Cl. 113-59).

NOVEMBER 30, 1937

2,100,377. Article of manufacture and method of making same. Merlin Martin Brubaker, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 31, 1934. 10 claims. (Cl. 91-68). Transparent, moistureproof, flexible heat-sealable film of regenerated cellulose coated with a film-forming substance and a wax material.

2,100,395. Molding of pulp. Roy D. Heymann, assignor to Pulp Products Company, Inc., New York, N. Y. Filed Feb. 11, 1935. 4 claims. (Cl. 92-54).

2,100,396. Hydro-pneumatic pulp molding. Roy D. Heymann, assignor to Pulp Products Company, Inc., New York, N. Y. Filed March 9, 1935. 9 claims. (Cl. 92-55).

2,100,496. Bleaching of cellulosic materials. Maurice C. Taylor and James F. White, assignors to The Mathieson Alkali Works, Inc., New York, N. Y. Filed Feb. 18, 1936. 5 claims. (Cl. 8-2). Bleaching with chlorine or a hypochlorite and then with an alkali or alkaline earth chlorite.

2,100,519. Bag and like tubing machine. Foster Gotch Robinson, assignor of one-half to Paper Sacks Limited, Bristol, England. Filed Aug. 10, 1936. 19 claims. (Cl. 93-19).

2,100,651. Manufacture of curviform hollow articles from binder-impregnated waterlaid felts. Milton O. Schur, assignor to Brown Company, Berlin, N. H. Filed Aug. 6, 1935. 3 claims. (Cl. 2-194). A hat having a cup-shaped portion, comprised of binder-impregnated waterlaid felt of cellulose fibers.

2,100,712. Method of, apparatus for coating textile material and a product thereof. Charles Emmey, New York, N. Y. Filed April 13, 1936. 6 claims. (Cl. 91-70).

2,100,739. Container machine. Paul M. Gilfillan, assignor to Shellmar Products Company, Mount Vernon, Ohio. Filed March 20, 1936. 6 claims. (Cl. 93-51.1).

2,100,761. System of control for dynamo-electric machines. Rest R. Baker, assignor to Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa. Filed April 13, 1935. 1 claim. (Cl. 92-38). Control for a paper making machine.

2,100,930. Paper cutting apparatus. Walter S. Aiken, assignor to The Clark-Aiken Company, Lee, Mass. Filed Oct. 28, 1936. 5 claims. (Cl. 164-66).

DECEMBER 7, 1937

2,101,191. Web cutting mechanism for bag machines. George W. Poppe, assignor to Equitable Paper Bag Co., Inc., Brooklyn, N. Y. Filed Dec. 1, 1936. 5 claims. (Cl. 93-19).

2,101,253. Process for producing artificial threads, fibers, and the like. Martin Guenther and Johann Eggert, assignors to "Patentverwertung Dr. Martin Guenther G.m.b.H.", Berlin, Germany. Filed Oct. 19, 1935. 6 claims. (Cl. 260-10). The corn straw is preboiled under a pressure of from 4 to 10 atmospheres with a previously used alkaline lye, then steamed under pressure after removal of the lye and employing the alkali of said after-boiling for preboiling a further quantity of corn straw.

2,101,268. Envelope machine. Abraham Novick, assignor to F. L. Smithe Machine Co., Inc., New York, N. Y. Filed April 27, 1932. 4 claims. (Cl. 271-46).

2,101,301. Method and apparatus for drying cellulose and like material in a continuous web. Sven Wellmar, Stockholm, Sweden. Filed Aug. 9, 1933. 5 claims. (Cl. 34-48). Method of conveying the web through a drying chamber in a zig-zag path and forcing warm air into the spaces between the vertical runs of the web.

2,101,449. Impregnated asbestos product. Robert E. Parry, assignor to Johns-Manville Corporation, New York, N. Y. Filed Sept. 27, 1935. 1 claim. (Cl. 91-68). Use of a vinyl resin and a chlorinated rubber.

2,101,511. Sole leather and process of preparing the same. Otto Roehm, Darmstadt, Germany. Filed June 29, 1936. 6 claims. (Cl. 149-1). Hide is first tanned with sulphite waste liquor and then filled with silicic acid solution.

2,101,706. Bleaching of pulp. John Alden Extrom and Hoke Martin, said Extrom assignor to Tomahawk Kraft Paper Company, Tomahawk, Wis., and said Martin assignor to The Mathieson Alkali Works, Inc., New York, N. Y. Filed Feb. 4, 1936. 5 claims. (Cl. 8-2). Method of introducing separately and continuously into the pulp being bleached chlorine and hydrated lime with intimate distribution of the chlorine through the pulp; the lime neutralizes acids formed in the chlorine treatment.

DECEMBER 14, 1937

2,101,847. Patch uniting method for envelopes. Robert L. Gray, Brooklyn, N. Y. Filed June 14, 1933. 9 claims. (Cl. 93-61). A method of forming window envelopes.

2,101,874. Composite fabric. William Wallace Rowe, assignor to The Paper Service Company, Lockland, Ohio. Filed March 8, 1934. 12 claims. (Cl. 154-50). The fabric comprises at least two layers of paper and a plurality of cementitious substances located therebetween, one being rubber latex and another a bituminous material.

2,101,921. Mineral wool insulation. George D. Shaver, Crown Point, Ind. Filed April 2, 1937. 7 claims. (Cl. 92-56).

2,101,974. Fabric treating machine. Harold H. Belcher, assignor to The Philadelphia Drying Machinery Company, Philadelphia, Pa. Filed July 13, 1931. 8 claims. (Cl. 34-48). A machine for drying fabrics in lengths.

2,102,001. Manufacture of dry-sealing envelopes. Vincent E. Heywood, assignor to United States Envelope Company, Springfield, Mass. Filed July 16, 1934. 22 claims. (Cl. 93-61).

2,102,004. Process of and apparatus for the manufacture of paper and the like. Edward Hutchins, assignor to International Paper Company, New York, N. Y. Filed Feb. 19, 1935. 4 claims. (Cl. 92-38). The step of smoothing over that layer of fibers which is initially formed into a web and simultaneously agitating the remainder of the stock in a direction transverse to the movement of said formed web, thereafter forming said stock with said formed web into a unitary web of fibrous material.

2,102,009. Carton and blank for forming the same. Henry Kondolf, assignor to Southern Kraft Corporation, New York, N. Y. Filed July 9, 1934. 2 claims. (Cl. 229-23).

2,102,033. Method of and apparatus for transporting and registering sheets. Ernest G. Rider, assignor to Stokes and Smith Company, Philadelphia, Pa. Filed Sept. 11, 1936. 33 claims. (Cl. 271-48). A system for transporting sheets, as box wrappers, labels, or the like.

2,102,106. Apparatus for discharging condensate from drying drums. William S. Allen, Warwick, R. I. Filed Oct. 21, 1936. 2 claims. (Cl. 34-4).

2,102,170. Paper machinery. Isaac Stern, New York, N. Y. Filed Nov. 17, 1934. 4 claims. (Cl. 164-11). A scorer for blanks, a source of power, etc.

2,102,207. Coated paper and paper-coating compositions. James K. Hunt and George H. Latham, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Jan. 23, 1936. 8 claims. (Cl. 9168). A highly greaseproof, water and moisture resistant product comprising paper coated with a mixed alkyl ether of cellulose.

2,102,233. Thermal insulation. Frank A. Biederman, assignor to Paper Patents Company, Neenah, Wis. Filed May 16, 1932. 8 claims. (Cl. 154-44). An assembly of superposed creped tissue paper sheets which are of such thinness as to be not self-supporting and a casing enclosing the assembly, the sheets being suspended edgewise from the top wall of the casing.

2,102,525. Separation of solid particles from fluids. Horace Freeman, assignor to Nichols Engineering and Research Corporation, New York, N. Y. Filed Aug. 24, 1937. 18 claims. (Cl. 92-28).

DECEMBER 21, 1937

2,102,595. Coating composition and method of making the same. Maurice V. Hitt, David G. Kennedy and Harry L. Priddy, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 8, 1935. 6 claims. (Cl. 134-79). A method of mixing carbon black with nitrocellulose and a diluent.

2,102,679. Coating and stripping device. Frank P. Carlson, New York, N. Y. Filed Oct. 1, 1935. 10 claims. (Cl. 91-18). A gripperless coating device for handling work in the form of individual sheets of relatively soft, pliable material.

2,102,766. Method of forming valve bags. John N. Tooker, assignor to Bartlett Arkell, New York, N. Y. Filed Aug. 29, 1934. 4 claims. (Cl. 93-35).

2,102,767. Machine for forming valve bags. John N. Tooker, assignor to Bartlett Arkell, New York, N. Y. Filed Aug. 29, 1934. 1 claim. (Cl. 93-8).

2,102,937. Plyboard adhesive. Jordan V. Bauer, assignor to Stein, Hall Manufacturing Company, Chicago, Ill. Filed July 26, 1935. 5 claims. (Cl. 134-23.4).

2,102,957. Asphalt solution. Felix Kaufler and Hilger Peter Schmitz, assignors to Dr. Alexander Wacker Gesellschaft fuer Electrochemische Industrie, G.m.b.H., Munich, Germany. Filed Nov. 22, 1933. 2 claims. (Cl. 134-1). Asphalt in a paraffin hydrocarbon and an alcohol or ketone.

2,102,984. Machine for applying adhesive. George W. von Hofe, assignor to New Jersey Machine Corporation, Hoboken, N. J. Filed Sept. 14, 1934. 17 claims. (Cl. 91-50).

2,103,092. Bag and method of producing the same. Francis T. Robinson, assignor to Arkell Safety Bag Company, New York, N. Y. Filed Aug. 19, 1933. 8 claims. (Cl. 93-35).

2,103,186. Chlorinated rubber coating composition. Jacob M. Schantz, asignor to Hercules Powder Company, Wilmington, Del. Filed July 2, 1935. 9 claims. (Cl. 134-17). Chlorinated rubber and "thermolyzed" tung oil.

DECEMBER 28, 1937

R20,606. Paper making machine. Charles R. Seaborne, assignor to American Lakes Paper Company, Waukegan, Ill. Original No. 1,517,018, dated Nov. 25, 1924. Application for reissue June 25, 1936. 5 claims. (Cl. 92-48).

R20,607. Building material. John Tomec, Trenton, N. J. Original No. 2,075,373, dated March 30, 1937. Application for reissue June 25, 1937. 11 claims. (Cl. 154-45.9).

2,013,318. Culinary utensil of fibrous structure and method of making same. Albert L. Clapp, Danvers, Mass. Filed June 17, 1933. 6 claims. (Cl. 92-21). A baking dish comprising interfelted fibrous material of a thickness not exceeding about 0.030 inch, the pores of which contain swelled starch (about 10%), which stiffens the structure and renders it substantially greaseproof.

2,103,339. Package forming machine. Leroy L. Salfisberg, assignor to Wrap-Ade Machine Company, Inc., Newark, N. J. Filed Aug. 21, 1936. 18 claims. (Cl. 93-18).

2,103,344. Process of making linings for jordan engine shells. Harold D. Stuck and Philip A. Sturtevant, assignors to John W. Bolton & Sons, Inc., Lawrence, Mass. Filed June 2, 1934. 4 claims. (Cl. 92-27). Process of making a section of a pre-assembled built up lining for a jordan engine shell.

2,103,360. Method of making equalizer sheets. Erwin C. Greenway, assignor to Wilson-Jones Company, Chicago, Ill. Filed Sept. 25, 1936. 3 claims. (Cl. 93-1).

2,103,640. Paper manufacture. George A. Richter, assignor to Brown Company, Berlin, N. H. Filed March 30, 1935. 4 claims. (Cl. 91-68). Method of producing a water-absorbing paper product of high wet-strength by impregnating a highly porous body with a dilute solution of a water-repellent cellulose ester (0.5 to 2% of the dry weight of the paper).

2,103,776. Novel glue product for gluing veneers and cross-ply sheets. Edouard Geistlich, Wolhusen, Switzerland. Filed Nov. 18, 1936. 7 claims. (Cl. 134-23.8). Glue, carbamide and aldehydes.

2,103,892. Wrapper. Harry W. Brown, assignor to Edward H. Angier (Angier Laboratories), Framingham, Mass. Filed Aug. 7, 1935. 2 claims. (Cl. 154-52).

2,103,896. Machine for disintegrating, screening, and pumping fibrous or paper making stocks. William T. Doyle and Thomas J. Sturtevant, assignors to Sturtevant Mill Company, Boston, Mass. Filed Dec. 12, 1935. 9 claims. (Cl. 92-20). A centrifugal pump.

Imports of Paper and Paper Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports, of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.

NEW YORK IMPORTS

WEEK ENDING JANUARY 8, 1938

SUMMARY

Cigarette paper .....2,958 cs.
Wall paper .....18 bls., 15 cs.
Paper hangings .....4 bls.
Newsprint .....2,531 bls., 10,090 rolls
Printing paper .....174 rolls, 61 bls., 52 cs.
Wrapping paper .....7 rolls, 44 bls., 84 cs.
Packing paper .....3 cs.
Drawing paper .....9 cs.
Filter paper .....17 cs.
Filter compound .....50 bls.
Filter mass .....90 bls.
Filter pulp .....6 crates
Surface coated paper .....76 cs.
Surface baryta coated paper.....343 crates
Metal covered paper .....7 cs.
Coated paper .....1 cs.
Marble paper .....3 cs.
Basic paper .....39 cs.
Decalcomania paper .....6 cs. (duplex)
Decalcomanias .....29 cs.
Tissue paper .....44 cs.
Writing paper .....2 cs.
Telegraph paper .....4 cs.
Transparent paper .....7 cs.
Tracing cloth .....31 cs.
Tracing paper .....7 cs.
Veneer paper.....2 cs.
Card board .....39 cs.
Paper tubes .....29 ctn., 43 cs.
Straw boards .....83 rolls
Miscellaneous paper .....133 bls., 92 cs.

CIGARETTE PAPER

Champagne Paper Corp., *Vincent* Havre, 1,256 cs.
Champagne Paper Corp., *San Mateo,* Havre, 981 cs.
De Mauduit Paper Corp., *San Mateo,* Havre, 2 cs.
Braunstein Freres, Inc., *San Mateo,* Havre, 42 cs.
Champagne Paper Corp., *Washington,* Havre, 517 cs.
R. J. Reynolds Tobacco Co., *Washington,* Havre, 160 cs.

WALL PAPER

F. Blank, *Washington,* Havre, 12 cs.
——, *Andania,* London, 14 bls. 3 cs.
F. J. Emmerich, *Washington,* Havre, 4 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., *American Merchant,* London, 4 bls.

NEWSPRINT

International Paper Co., *Utahan,* Cornerbrook, 2,198 rolls, 1,433 bls.
International Paper Sales Co., *Utahan,* Cornerbrook, 3,290 rolls, 850 bls.
Jay Madden Corp., *Pr. Harding,* Hamburg, 248 bls.
N. Y. Evening Journal, *Markland,* Liverpool, N. S., 470 rolls.
N. Y. Tribune, *Markland,* Liverpool, N. S., 1,401 rolls.
World Telegram, *Markland,* Liverpool, N. S., 569 rolls.
Brooklyn Daily Eagle, *Markland,* Liverpool, N. S., 175 rolls.
Parsons & Whittemore, Inc., *Markland,* Liverpool, N. S., 748 rolls.
Lunham & Reeve, Inc., *Svaneholm,* Kotkam, 430 rolls.
Jay Madden Corp., *Svaneholm,* Kotkam, 561 rolls.

PRINTING PAPER

W. Bersch, *Gerolstein,* Antwerp, 12 cs.
Jay Madden Corp., *Pr. Harding,* Hamburg, 61 bls., 174 rolls.
——, *Westernland,* Antwerp, 16 cs.
Steiner Paper Corp., *Hansa,* Bremen, 21 cs.
Dingelstedt & Co., *Hansa,* Bremen, 3 cs.

WRAPPING PAPER

M. M. Cohen, *Pr. Harding,* Hamburg, 44 bls., 7 rolls.
——, *Svaneholm,* Gothenburg, 74 cs.
Steiner Paper Corp., *Hansa,* Hamburg, 10 cs.

PACKING PAPER

Gevaert Co. of America, *Westernland,* Antwerp, 3 cs.

DRAWING PAPER

H. Reeve Angel & Co. Inc., *Andania,* London, 4 cs.
H. Reeve Angel & Co. Inc., *American Merchant,* London, 5 cs.

FILTER PAPER

H. Reeve Angel & Co., *Andania,* London, 10 cs.
H. Reeve Angel & Co., *American Merchant,* London, 7 cs.

FILTER COMPOUND

——, *Westernland,* Antwerp, 50 bls.

FILTER MASS

A. W. Fenton Co., *Hansa,* Bremen, 90 bls.

FILTER PULP

Gerhard & Hey, *Beemsterdyk,* Rotterdam, 6 crates.

SURFACE COATED PAPER

Gevaert Co. of America, *Black Gull,* Antwerp, 27 cs.
Gevaert Co. of America, *Westernland,* Antwerp, 43 cs.
——, *Westernland,* Antwerp, 6 cs.

SURFACE BARYTA COATED PAPER

Globe Shipping Co., *Hansa,* Bremen, 343 crates.

METAL COVERED PAPER

K. Pauli Co., *Hansa,* Bremen, 7 cs.

COATED PAPER

W. J. Byrnes, *Washington,* Southampton, 1 cs.

MARBLE PAPER

Borden Riley Paper Co., *Westernland,* Antwerp, 3 cs.

BASIC PAPER

Globe Shipping Co., *Hansa,* Bremen, 39 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *Scythia,* Liverpool, 6 cs. (duplex).

DECALCOMANIAS

Sellers Transportation Co., *Hansa,* Hamburg, 29 cs.

TISSUE PAPER

——, *Scythia,* Liverpool, 1 cs.
Atlantic F'd'g Co., *Hansa,* Hamburg, 13 cs.
——, *Kinai Maru,* Kobe, 30 cs.

WRITING PAPER

H. W. Robinson Co., *Hansa,* Hamburg, 2 cs.

TELEGRAPH PAPER

R. C. A. Communications, Inc., *Andania,* London, 4 cs.

TRANSPARENT PAPER

M. J. Corbett & Co., *Black Gull,* Rotterdam, 2 cs.
M. J. Corbett & Co., *Beemsterdyk,* Rotterdam, 5 cs.

TRACING CLOTH

C. Bruning Co., *Hansa,* Bremen, 31 cs.

TRACING PAPER

Steiner Paper Corp., *Hansa,* Bremen, 7 cs.

VENEER PAPER

——, *Kinai Maru,* Kobe, 2 cs.

CARD BOARD

R. Reiner, Inc., *Hansa,* Hamburg, 39 cs.

PAPER TUBES

——, *Hansa,* Bremen, 29 ctn., 43 cs.

STRAW BOARDS

——, *Black Falcon,* Rotterdam, 83 rolls.

MISCELLANEOUS PAPER

Japan Paper Co., *Tai Yin,* Kobe, 11 cs.
Japan Paper Co., *Manman Maru,* Kobe, 76 cs.
E. H. Sergent Co., *Svaneholm,* Gothenburg, 5 cs.
Steiner Paper Corp., *Beemsterdyk,* Rotterdam, 133 bls.

RAGS, BAGGINGS, ETC.

Irving Trust Co., *E. Francqui,* Antwerp, 50 bls. bagging.
——, *Vincent,* Havre, 58 bls. cotton waste.
Keene, Inc., *Vincent,* Havre, 114 bls. bagging.
E. J. Keller Co. Inc., *Ida,* ——, 71 bls. rags.
J Cohen Sons Co. Inc., *Scythia,* Liverpool, 16 bls. rags.
Banco Coml Italiane Trust Co., *Tai Yin,* Kobe, 58 bls. rags.
A. H. Searle, *R. Maersk,* London, 40 bls. rags.
W. Steck & Co., *R. Maersk,* London, 96 bls. old strings.
——, *Gerolstein,* Antwerp, 107 bls. bagging.
Castle & Overton, Inc., *Pr. Harding,* Hamburg, 117 bls. bagging.
Castle & Overton, Inc., *Black Gull,* Rotterdam, 164 bls. bagging.
E. J. Keller Co. Inc., *Black Gull,* ——, 83 bls. bagging.
American Express Co., *Black Gull,* Antwerp, 237 bls. rags.
Chase National Bank, *Schodack,* Bordeaux, 80 bls. rags.
Darmstadt Scott & Courtney, *Schodack,* Bordeaux, 212 bls. rags.
E. J. Keller Co. Inc., *Schodack,* ——, 302 bls. rags.
E. J. Keller Co. Inc., *Nanman Maru,* ——, 72 bls. hemp waste.
O'Brien Padawer Co., *Nanman Maru,* Osaka, 200 bls. cotton waste.
Continental Bank Trust Co., *Fernhill,* Algiers, 355 bls. rags.
E. J. Keller Co. Inc., *San Mateo,* ——, 87 bls. bagging.
Chase National Bank, *San Mateo,* Havre, 114 bls. bagging.
——, *San Mateo,* Havre, 100 bls. rags.
Philadelphia National Bank, *San Mateo,* Havre, 55 bls. rags.
W. Steck & Co., *San Mateo,* Havre, 45 bls. old string.
Chase National Bank, *Westernland,* Antwerp, 80 bls rags.
E. Mayer Co. Inc., *Excambion,* Alexandria, 90 bls. rags.
W. Steck & Co., *Excambion,* Alexandria, 54 bls. bagging.
S. Shapiro & Sons, *Excambion,* Alexandria, 204 bls. bagging.
Burka Bagging Co. Inc., *Belle Isle,* Halifax, 110 bls. bagging.
Loumar Textile By Products Inc., *Beesterdyk,* Rotterdam, 126 bls. bagging.

OLD ROPE

Irving Trust Co., *Vincent,* Dunkirk, 53 coils
W. Steck & Co., *Black Gull,* Rotterdam, 41 coils.
American Express Co., *Black Falcon,* Rotterdam, 143 bls.

WOOD PULP

Absorbo Beer Pad Co., *Pr. Harding,* Hamburg, 207 bls. woodpulp.
——, *Black Falcon,* Rotterdam, 735 bls. wood pulp, 144 tons.
Perkins Goodwin & Co., *Svaneholm,* Gothenburg, 290 bls. sulphate.
Price & Pierce, Ltd., *Svaneholm,* Gothenburg, 325 bls. dry sulphite.
Gottesman & Co. Inc., *Svaneholm,* Halmstad, 1,500 bls. sulphite.
Bank of N. Y. Trust Co., *Hansa,* Hamburg, 555 bls. wood pulp, 111 tons.
Castle & Overton, Inc., *Hansa,* Hamburg, 700 bls. wood pulp, 140 tons.

WOOD PULP BOARDS

W. Bersch, *Pr. Harding,* Hamburg, 175 bls.
H. Fuchs & Son, *Svaneholm,* Gothenburg, 12 bls.

WOOD PULP PASTE BOARDS

Fibre Products Manfg Co., *Washington,* Hamburg, 35 bls.

PORTLAND IMPORTS

WEEK ENDING JANUARY 8, 1938

Price & Pierce, Ltd., *Pluto,* ——, 750 bls. unbleached sulphate, 600 bls. unbleached sulphite.

BOSTON IMPORTS

WEEK ENDING JANUARY 8, 1938

Elliott Addressing Machine Co., *Nanman Maru,* Yokohama, 19 cs. paper.
Spaulding & Tewksbury Co., *Beemsterdyk,* Rotterdam, 162 bls. wood pulp boards.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 8, 1938

Castle & Overton, Inc., *Vincent,* Havre, 80 bls. rags.
E. J. Keller Co. Inc., *Vincent,* ——, 546 bls. rags, 107 bls. new cuttings.
D. S. Stern Corp., *R. Maersk,* London, 59 coils old rope.
E. J. Keller Co. Inc., *Schodack,* ——, 403 bls. rags.
F. Weber Co., *Fernhill,* Genoa, 9 cs. drawing paper.
N. Snellenburg & Co., *Fernhill,* Leghorn, 1 cs. paper.
——, *Beemsterdyk,* Rotterdam, 54 bls. rags.
——, *Beemsterdyk,* Rotterdam, 81,606 kilos china clay.

WILMINGTON IMPORTS

WEEK ENDING JANUARY 8, 1938

Chase National Bank, *Ida,* Trieste, 2,000 bls. sulphite pulp.

BALTIMORE IMPORTS

WEEK ENDING JANUARY 8, 1938

Chase National Bank, *Ida,* Trieste, 1,696 bls. wood pulp.
Washington Post, *Markland,* Liverpool, N. S., 2,113 rolls newsprint.
Parsons & Whittemore, Inc., *Markland,* Liverpool, N. S., 146 rolls newsprint.
Congoleum Nairn Co., *Schodack,* Bordeaux, 107 bls. rags.
Congoleum Nairn Co., *Schodack,* Havre, 374 bls. rags.
——, *Black Falcon,* Rotterdam, 107 bls. wood pulp boards, 27 tons.
Castle & Overton, Inc., *Black Falcon,* Rotterdam, 317 bls. wood pulp, 63 tons.
Price & Pierce, Ltd., *Teneriffa,* ——, 250 bls. unbleached mechanical pulp.
Price & Pierce, Ltd., *Teneriffa,* ——, 7,224 bls. unbleached sulphate.
Price & Pierce, Ltd., *Teneriffa,* ——, 5,484 bls. unbleached sulphite.
Parsons & Whittemore, Inc., *City of Newport News,* ——, 580 bls. wood pulp.
Gottesman & Co. Inc., *Tennessee,* Sweden, 3,570 bls. sulphite.
M. Sone, *Gonzenheim,* Sundsvall, 720 bls. wood pulp.
Pagel Horton & Co. Inc., *Vasaholm,* Sweden, 5,500 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING JANUARY 8, 1938

N. Y. Trust Co., *Schodack,* Havre, 190 bls. bagging.
Gottesman & Co. Inc., *Svaneholm,* Halmstad, 3,550 bls. sulphite.
Lagerloef Trading Co., *Svaneholm,* Kotka, 3,048 bls. mechanically ground pulp.
Jay Madden Corp., *Svaneholm,* Kotka, 315 rolls wood pulp boards.
Price & Pierce, Ltd., *Teneriffa,* ——, 1,500 bls. unbleached sulphite.
Price & Pierce, Ltd., *Vasaholm,* ——, 2,920 bls. unbleached sulphite.
Gottesman & Co. Inc., *Vasaholm,* Sweden, 8,250 bls. sulphite.

HOUSTON IMPORTS

WEEK ENDING JANUARY 8, 1938

——, *San Mateo,* Havre, 105 bls. bagging.
——, *San Mateo,* Dunkirk, 21 bls. bagging.

NEW ORLEANS IMPORTS

WEEK ENDING JANUARY 8, 1938

M. Sone, *Tatra,* Sundsvall, 4,200 bls. wood pulp.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, January 12, 1938.

The wholesale paper market reports conditions as unchanged for the week. Under a relatively light consumer demand for all grades of paper, other than newsprint, sales volume continues to be reported as well below normal for the period of quiet following the holidays. The prices of all grades of paper are firm, with only scattered reports of price reductions below the prevailing contract and spot market quotations. The quantities involved are too small to have any effect on the stability of the market.

The small orders received during the current week were of the hand-to-mouth variety and buyers are still hesitant about placing new business in substantial quantities. Buying is, therefore, largely confined to the filling in of current needs.

The newsprint market is active and shipments are moving in normal volume.

The fine paper market continues to report demand as very light. A little improvement is reported in the sulphite bond papers, though no increase in demand has as yet set in. Ground wood papers are in slightly better demand. No change in the prevailing quiet in the tissue market is reported. Prices of all grades of papers are unchanged for the week. Kraft papers continue in light demand. The box board market continues quiet with no important changes in prices for this week.

Chemical Pulp

The chemical pulp market continues quiet. The downward trend in demand continues. Prices for the current week are unchanged. A gradual improvement is expected in the immediate future.

Mechanical Pulp

The mechanical pulp market reports conditions as for the preceding week. No change in either demand or prices are reported for this week.

Old Rope and Bagging

The old rope market is very quiet, with no changes reported for the week. Demand for bagging is very light and no changes in prices are reported.

Rags

The domestic rag market is very quiet, with no reductions in prices reported. There is little if any business being done in foreign rags and prices continue nominal.

Waste Paper

With the exception of ledger stock and white envelope cutting, the waste paper market is very quiet. No changes in prices are reported for the week.

Twine

Trading continues to be very quiet in the twine market. Prices are well maintained and no reductions for the current week are reported.

Cincinnati Industrial Rubber Products

A new spiral bound catalogue just issued by The Cincinnati Rubber Manufacturing Company, of Cincinnati, Ohio, fully describes the company's large line of industrial rubber goods.

Among the outstanding items of equipment are the Cincinnati transmission belts, which the manufacturer states have reduced the problem of slippage and stretch to negligible factors. These belts include the Flexicord, an endless cord belt; Fidelity, a raw edge, hard duck belt; the Cincinnatus Duoflex, a hard duck belt with crosswise flexibility, providing closer pulley contact; and the Pacemaker, an all-purpose belt made of special, heavy 12-ounce duck, with a high grade friction testing 20-24 pounds.

In addition to the line of conveyor and elevator belts, the company lists a large line of air, steam, water, garden, suction, fire, acid, and oil hose.

Cincinnati rubber covered rolls for use in paper mills include press rolls, suction press rolls, waxing rolls, couch rolls, wormed cutter rolls, felt carrier rolls, breast rolls, sizing rolls, and lump breaker rolls.

Sheet packing, sheet rubber, piston packing, gaskets, tubing, strips and a large variety of molded products are described. The rubber specialties include screen diaphragms, watermarking bands, endless blankets, pump valves, and tank lining.

Alexander Thomson Made Chairman

DAYTON, Ohio, January 7, 1938.—Alexander Thomson, chairman of the board of the Champion Paper and Fiber Company, president of the Ohio and Hamilton Chambers of Commerce, was named chairman of the board of the Cincinnati branch of the Federal Reserve bank of Cleveland, at an organization meeting in Cincinnati, Wednesday.

Mr. Thomson succeeds Stuart B. Stutphin, recently re-named at Washington to another two-year term on the board. Mr. Thomson was appointed a member of the board last year.

Contracts Under Walsh-Healey Act

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 12. 1938.—During the last quarter of 1937 according to the Labor Department 146 contracts were made by the government under the Walsh-Healey Act for paper and allied products totaling $10,503,408.79 which was 3.24 per cent of the total government contracts made during that period.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, January 12, 1938.

BLANC FIXE — The blanc fixe market continues steady. Prices are firm and conform to the quotations of the preceding week. The pulp is quoted at from $42.50 to $45 per ton, in bulk; the powder at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—The demand for bleaching powder continues at about the level of last week. Prices are firm and unchanged. Bleaching powder is offered at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The casein market reports demand as fair. Domestic standard ground casein is quoted at from 11 to 11½ cents per pound; domestic finely ground at from 11½ to 12 cents per pound; all in bags, car lot quantities.

CAUSTIC SODA—The demand for caustic soda is reported as steady. Prices are firm. Solid caustic soda is quoted at from $2.10 to $2.30 per 100 pounds; flake and ground at from $2.50 to $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—The demand for china clay continues at about the same level as the preceding week. Prices are firm. Imported clay is quoted at from $14.50 to $25 per ton, ship side. Domestic filler clay is offered at from $6.50 to $12 per ton; coating clay at from $11 to $22 per ton, at mines.

CHLORINE—The demand for chlorine is reported as steady. Prices are firm and unchanged for the week. Chlorine is quoted at $2.15 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported as steady. Prices are fractionally lower for the current week. Paper making rosin is quoted at $5.60; wood rosin at $5.60 per 280 pounds, gross weight, in barrels at Savannah. Seventy per cent rosin size is quoted at $2.93 per 100 pounds, in tank cars, f.o.b., shipping point.

SALT CAKE—The demand for salt cake is reported at about the level of last week. Quotations of domestic salt cake range at from $12 to $13.50 per ton, with little quantity available; chrome salt cake is quoted at from $11 to $12 per ton, f.o.b., shipping point. Imported salt cake is quoted at from $14.50 to $15 per ton, Gulf or Atlantic Seaboard, on dock.

SODA ASH—The soda ash market is reported as steady. Prices are firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $.90; in bags, $1.05; and in barrels, $1.35.

STARCH—The starch market is reported as strong. Prices of corn starch are higher for the week. Globe pearl is quoted at $2.65 per 100 pounds, in bags, and at $2.90 in barrels. Special paper starch is quoted at $2.75 per 100 pounds, in bags, and at $3.00 in barrels; all prices in car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—The sulphate of alumina market continues steady. Prices are firm and unchanged for the week. The commercial grades are quoted at from $1.25 to $1.60 per 100 pounds; iron free at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR—The demand for sulphur continues at about the level of last week. Prices are firm and unchanged. Annual contracts are quoted at $18 per long ton, f.o.b., cars at mines. Spot and nearby car lots are quoted at $21 per ton.

TALC—The talc market is reported as steady. Prices are firm and unchanged. Domestic talc is quoted at from $15 to $18 per ton, Eastern mines. Imported talc is quoted at from $25 to $40 per ton, on dock.

Market Quotations

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	@	—
Kraft—per cwt.—Delivered Zone A			
No. 1 Northern	$5.50	@	—
Superstandard	5.00	@	—
Northern Standard Wrapping	4.75	@	—
Standard Wrapping	4.50	@	—
Tissues—Per Ream—Carlots			
White No. 1	1.02½	@	—
White No. 1 M. G.	.97½	@	—
White No. 1½	.67½	@	—
White No. 2	.60	@	—
Anti-Tarnish M. G.	.75	@	—
Colored	.87½	@	—
Kraft	.75	@	—
Manila	.60	@	—
Unbl. Toilet, 1 M.	3.40	@	—
Bleached Toilet	5.26	@	—
Paper Towels—			
Unbleached	1.95	@	—
Bleached	3.15	@	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	$8.25	@	$10.25
No. 2 Jute	7.50	@	9.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Boards, per ton—			
News	35.00	@	37.50
Chip	35.00	@	37.50
Sgl. Mla. Li. Chip	52.50	@	—
Jute Lined Chip	52.50	@	—
White Pat. Coated	65.00	@	—
Kraft Liners	55.00	@	—
Binders Boards	75.00	@	80.00

The following are representative of distributors' resale prices:—

Rag Content Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds		Ledgers	
100% Rag Ext. No. 1.	$41.40	@ $48.50	$42.55	@ $50.00
100% Rag	32.80	@ 38.50	33.95	@ 39.75
85% Rag	.....		32.20	@ 37.75
75% Rag	24.75	@ 29.00	25.90	@ 30.50
65% Rag	21.65	@ 26.25	22.80	@ 27.75
50% Rag	18.70	@ 22.75	19.90	@ 24.25
25% Rag	15.80	@ 19.25	16.95	@ 20.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra

Sulphite Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$9.35 @ $11.50	$10.55 @ $12.75
No. 2	8.50 @ 10.25	9.65 @ 11.75
No. 4	7.60 @ 9.25	8.80 @ 10.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra.

Free Sheet Book Papers—
White, Cased Paper,
Delivered in Zone 1:

No. 1 Glossy Coated	$12.15	@ $14.25
No. 2 Glossy Coated	10.55	@ 12.25
No. 3 Glossy Coated	9.35	@ 11.00
No. 4 Glossy Coated	8.80	@ 10.50
No. 1 Antique (watermarked)	8.80	@ 10.50
No. 2 Offset	8.05	@ 9.50
A Grade E. F.	7.90	@ 9.50
A Grade S. & S. C.	8.15	@ 9.75
B Grade E. F.	7.30	@ 8.75
B Grade S. & S. C.	7.55	@ 9.00
C Grade E. F.	7.00	@ 8.50
C Grade S. & S. C.	7.25	@ 8.75
D Grade E. F.	6.75	@ 8.25
D Grade S. & S. C.	7.00	@ 8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	35.00	@	36.00
Dry	40.00	@	42.00
(Delivered)			
No. 1 Domestic and Canadian	34.00	@	35.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.00	@	4.15
Prime Qualities—			
Easy-Bleaching Sulphite	2.50	@	3.25
Strong Unbleached Sulphite	2.25	@	3.00
(On Dock, Atlantic Ports)			
Kraft Bleached	3.00	@	4.00
Kraft Light & Strong	2.75	@	3.00
Kraft No. 1	2.25	@	2.75
Kraft No. 2	2.00	@	2.25
(F.o.b. Pulp Mill)			
Kraft Domestic	2.00	@	2.50
(Delivered)			
Soda Bleached	2.90	@	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	7.00	@	7.25
Silesias, No. 1	5.00	@	5.25
New Unbleached	7.50	@	8.00
Blue Overall	6.00	@	6.25
Fancy	2.60	@	2.65
Washables	2.10	@	2.25
Mixed Khaki Cuttings	3.60	@	3.75
O. D. Khaki Cuttings	4.35	@	4.50

Old Rags

White, No. 1—			
Repacked	3.50	@	3.60
Miscellaneous	2.75	@	3.00
White, No. 2—			
Repacked	2.10	@	2.25
Miscellaneous	1.70	@	1.80
Thirds and Blues—			
Repacked	1.40	@	1.50
Miscellaneous	1.25	@	1.30
Roofing Rags—			
No. 1	1.15	@	1.25
No. 2	.85	@	.80
No. 3 (bagging)	.65	@	.70
No. 4	.65	@	.70
No. 5A	.65	@	.70

Foreign Rags

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	@	2.20
New Light Silesias	5.50	@	5.75
Light Flannelettes	5.50	@	5.75
New White Cuttings	7.00	@	7.50
New Light Oxford	4.00	@	4.50
New Light Prints	3.00	@	3.25

Old Rags

No. 1 White Linens	7.50	@	8.50
No. 2 White Linens	6.50	@	7.50
No. 3 White Linens	4.50	@	5.50

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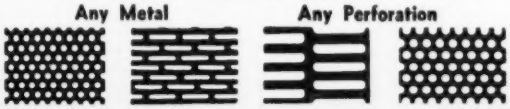

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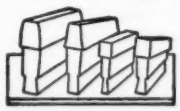

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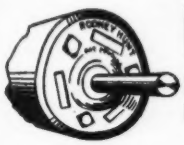

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No. 4 White Linens	2.25	@	3.25
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	3.00
No. 4 White Cotton	1.90	@	2.20
Extra Light Prints	2.00	@	2.40
Ord. Light Prints	1.75	@	2.15
Med. Light Prints	1.55	@	1.95
Dutch Blue Cottons	2.25	@	2.50
French Blue Linens	3.00	@	—
Checks and Blues	2.00	@	—
Linsey Garments	1.90	@	2.00
Dark Cottons	1.50	@	1.60
Old Shopperies	1.30	@	1.45
New Shopperies	1.45	@	1.50
French Blues	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.20	@	2.25
Domestic	2.00	@	2.15
Wool Tares, light	1.50	@	1.75
Wool Tares, heavy	2.00	@	2.10
Bright Bagging	1.60	@	1.70
Manila Rope—			
Foreign	2.75	@	3.00
Domestic	2.75	@	3.00
Jute Threads	2.75	@	3.00
Sisal Strings	1.75	@	2.00
Mixed Strings	.60	@	.70

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.50	@	2.60
Ordinary Hard White No. 1	1.90	@	2.00
Soft White No. 1	1.80	@	2.20
Flat Stock—			
Stitchless	.70	@	.80
Overissue Mag	.60	@	.70
Solid Flat Book	.50	@	.55
Crumbled No. 1	.40	@	.45
Ledger Stock	.90	@	.95
New B. B. Chips	.15	@	.20
Manila—			
New Env. Cut	1.85	@	2.00
New Cuttings	1.50	@	1.60
Old Kraft Machine— Compressed bales	.70	@	.80
News—			
No. 1 White News	1.10	@	1.20
Strictly Overissue	.45	@	.50
Strictly Folded	.30	@	.35
No. 1 Mixed Paper	.15	@	.20

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.15	@	.16½
White Hemp	.16	@	.17½
Fine Polished—			
Fine India	.20	@	.22
Unpolished—			
Box	.11	@	.11½
Paper Makers	.11	@	.12¾
Tube Rope	.11½	@	.14¾
Wall Paper	.12½	@	.13¾
Wrapping	.14	@	.14½
Soft Fiber Rope	.13¾	@	.14¾
Cotton	.16	@	.20
(Hard Fiber)			
Medium Java	.11	@	.11½
Mex. Sisal	.10	@	.10½
Manila	.20	@	.27
Domestic	2.50	@	2.75
Sisal Rope	1.75	@	2.00
Mixed Rope	.60	@	.75
Transmission Rope	1.25	@	1.50
Soft Jute Ropes	1.90	@	2.00
Jute Carpet Threads	1.40	@	1.60
Gunny Bagging—			
Foreign	2.15	@	2.25
Domestic	1.60	@	1.65
Bleachery Burlap	3.50	@	4.00
Scrap Burlap—			
Foreign	1.80	@	1.90
Domestic	1.50	@	1.60
Scrap Sisal	1.75	@	1.80
Scrap Sisal for Shredding	1.85	@	2.10
Wool Tares, Heavy	2.00	@	2.05
New Burlap Cuttings	2.00	@	2.25
Aust. wool pouches	3.00	@	3.25
Heavy Baling bagging	1.90	@	2.00
Paper Mill Bagging	1.50	@	1.60
Bagging No. 2	.85	@	1.00

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.03	@	.03¼
New White No. 1	.07½	@	.07¾
New White No. 2	.05½	@	.05¾
New Light Flannelettes	—	@	.06
Silesias No. 1	.05½	@	.06
New Black Silesias	.03¾	@	.04
Silesias No. 1			
Soft Unbleached	.06¾	@	.07
Blue Cheviot	.06½	@	.06¾
Fancy	.03	@	.03¼
Washable	.02¾	@	.03

Domestic Rags (Old)

(F. o. b. Boston)

Cottons—According to grades—			
Blue Overalls	.06¼	@	.06½
New Black, soft	.03¾	@	.04
Khaki Cuttings	.03½	@	.04
O. D. Khaki	.04	@	.04¼
Corduroy	.02¾	@	.03
New Canvas	.07¼	@	.07¾
B. V. D. Cuttings	.06¼	@	.06½
Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Third and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.00	@	1.10
No. 2	.75	@	.85
No. 3	.65	@	.70

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.30	@	1.40
Dutch Blues	2.85	@	3.00
New Checks and Blues	2.85	@	3.00
Old Fustians	2.50	@	2.60
Old Linsey Garments	1.90	@	2.00
New Silesias	6.00	@	6.50

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings			
New White, No. 1	.06	@	.06½
New White, No. 2	.04	@	.04½
Light Silesias	.05½	@	—
Silesias, No. 1	—	@	.05½
Black Silesias, soft	.03	@	.03½
New Unbleached	—	@	.06½
Washable, No. 1	.01¾	@	.02
Blue Overall	.04	@	.04½
Cottons—According to grades—			
Washable, No. 2	.01¼	@	.01½
New Blue	.01¼	@	.01½
Fancy Percales	—	@	.03½
New Black Soft	.03	@	.03½
New Light Seconds	—	@	.05½
New Dark Seconds	1.00	@	1.25
Khaki Cuttings—			
No. 1 O. D.	.03½	@	.04
No. 2 Mixed	—	@	.02¼
Corduroy	.02	@	.02½
New Canvas	.06	@	.06½
New Black Mixed	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.25
Miscellaneous	2.75	@	3.00
Twos and Blues—			
Miscellaneous	1.25	@	1.50
Repacked	1.50	@	1.75
Black Stockings (Export)	3.00	@	3.50
Fancy Stock—			
Foreign No. 1	—	@	1.00
Domestic No. 1	—	@	1.00
Domestic No. 2	.85	@	.90
Roofing Bagging	.80	@	.90

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	—
Domestic	1.70	@	1.74
Manila Rope	3.00	@	3.25
Sisal Rope	2.00	@	2.25
Mixed Rope	1.00	@	1.10
Scrap—			
No. 1	1.50	@	—
No. 2	1.00	@	1.25
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.35	@	2.40
No. 2 Hard White	2.00	@	2.10
No. 1 Soft White	2.00	@	2.10
No. 2 Soft White	1.40	@	1.50
No. 1 Mixed	.70	@	.75
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.25	@	1.30
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.85	@	.90
Manila Cuttings	1.50	@	1.75
Print Manila	.45	@	.50
Container Manila	—	@	.40
Kraft Paper	.90	@	.95
No. 1 Mixed Paper	.25	@	.30
Straw Board Chip	.25	@	.30
Binders Board Chip	.25	@	.30
Corrugated Board	.50	@	.55
Overissue News	.55	@	.60
Old Newspapers	.30	@	.35

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.25	@	2.40
No. 1 Soft White	1.85	@	2.15
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.30	@	1.50
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.65	@	.75
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.60	@	1.70
Manila Envelope Cuttings, extra quality	2.00	@	2.10
No. 1 Old Manila	.85	@	.95
White Blank News	1.30	@	1.40
No. 1 Kraft	.90	@	1.00
Mixed Papers	.10	@	.15
Print Manila	.45	@	.50
Container Manilas	27½	@	—
Old Newspapers	.20	@	.25
Paper Wool Strings	—	@	.60
Overissue News	.45	@	.50
Box Board Chips	35	@	.40
Corrugated Boxes	.25	@	.27½
Kraft corrugated boxes	.60	@	.70
Screenings wrappers	.45	@	.50

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	—	@	2.50

CHICAGO

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	3.15	@	3.25
No. 1 Hard White	2.50	@	2.60
No. 1 Soft White	2.05	@	2.10
Ledger & Writings	1.30	@	1.40
Solid Books	1.20	@	1.25
Blanks	1.40	@	1.50
Krafts	.90	@	1.00
New Kraft Cuts	1.70	@	1.80
Manila Env. Cuts	2.15	@	2.25
Ex. No. 1 Manila	2.15	@	2.25
No. 1 Manila	1.70	@	1.80
Overissue News	.60	@	.70
Old Newspapers—			
No. 1 Folded News	.45	@	.50
No. 1 Mixed Paper	.35	@	.40
Roofing Stocks—			
No. 1	2.00	@	2.25
No. 2	1.85	@	2.00

TORONTO

Paper

Bonds and Ledgers

Delivered

No. 1 White	.35½	@	.36½
No. 1 Tints	.36½	@	.37½
No. 2 White	.26½	@	—
No. 2 Tints	.27½	@	—
No. 4 White	—	@	.1550
No. 4 Tints	.16	@	.1650
No. 5 Bond—White	.11.35	@	—
No. 5 Bond—Tints	.12.35	@	—
No. 5 Bond—Golden Rod	13.35	@	—
No. 5 Ledger—White	.1185	@	—
No. 5 Ledger—Tints	.1285	@	—
No. 6 Bond—White	10.75	@	—
No. 6 Bond—Tints	.11.25	@	—
No. 6 Bond—Golden Rod	12.75	@	—
No. 7 Bond—White	9.10	@	—
No. 7 Bond—Tints	9.60	@	—
No. 7 Bond—Golden Rod	11.10	@	—
Book—			
No. 1 M. F.	7.10	@	7.35
No. 2 M. F.	6.85	@	7.20
No. 3 M. F.	5.60	@	6.30
No. 1 S. C.	7.60	@	7.85
No. 2 S. C.	7.10	@	7.35
No. 3 S. C.	6.10	@	6.35
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	11.00	@	—
No. 3 Coated and Litho	9.50	@	10.00
Coated tinted	13.00	@	13.50
Wrapping—delivered—			
Rag Brown	4.85	@	5.55
White Wrap	4.00	@	—
"B" Manila	4.90	@	6.25
No. 1 Manila	5.50	@	7.00
Fiber	5.50	@	—
Kraft, No. 2	5.50	@	—

(F. o. b. Cars, Toronto)

News per ton—			
Rolls (contract)	50.00	@	—
Sheets	58.00	@	—

Pulp

Ground wood	30.00	@	—
Unbleached Sulphite	49.00	@	—
Book (Class 1)	64.00	@	—
Writing (Class 2)	62.00	@	—
Select (Class 3)	63.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.50	@	—
Soft White	2.15	@	—
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.00	@	—
Light and Crumpled Book Stock	.85	@	—
Ledgers and Writings	1.20	@	—
Manilas—			
New Manila Cut	1.35	@	—
Printed Manilas	.55	@	—
Kraft	1.00	@	1.10
News and Scrap—			
Strictly Overissue	.65	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.50	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

New White Shirt Cuttings	.06¼	@	.07
Fancy Shirt Cuttings	.02½	@	.03